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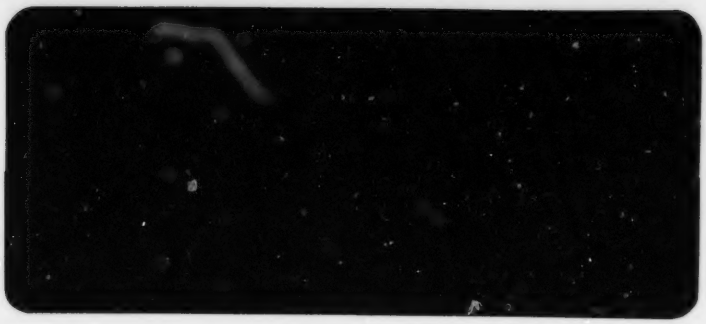

ALBERTA GEOLOGICAL SURVEY
COAL GEOLOGY

COAL GEOLOGY DATA BASE
GLOSSARY APPENDIX 1

R.J.H. Richardson
G.B. Mandryk
D.W. Fietz

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APPENDIX 1

AGS COAL DATABASE GLOSSARY

1.0 PREAMBLE:

During the early part of 1988, the Coal Group of the Alberta Geological Survey began development of the Coal Database. The Coal Database was established in a VAX/VMS environment and used INGRES as the relational database management system. The Coal Database was designed to accommodate virtually any type of

- o locational
- o structural
- o lithological
- o geological
- o sample/analytical data relating to coal and associated strata in Alberta.

The above noted types of information have been grouped into many electronic tables, each containing a number of attributes (columns). To properly

- o add
- o delete
- o revise
- o extract data from the Coal Database, it is imperative that a user know (or is able to find out) the specific data types stored within the Database. The following text " 2.0 GLOSSARY " provides that necessary information.

The Glossary has been compiled in alphabetical order based on the assigned abbreviation of an attribute. Overall, the Glossary has a split-page format

- o left side; the assigned abbreviation of an attribute
- o right side; attribute definition; drawings and figures have been incorporated where deemed suitable and/or necessary.

2.0 GLOSSARY

ATTRIBUTE	DEFINITION
ABV	Abrasiveness; 'a measure of the property of a material causing wear on a surface due to friction'...ref: ERCB 'Data Element Description Report'.
ADD_CITY	Identifies the 'city' part of a coal company's address.
ADD_PC	Identifies the 'postal code' part of a coal company's address.
ADD_PO_BOX	Identifies the 'post office box number' part of a coal company's address.
ADD_PROV	Identifies the 'province' part of a coal company's address.
ADD_ST	Identifies the 'street name/number' part of a coal company's address.
ADD_SUITE_NO	Identifies the 'suite number' part of a coal company's address.
AFFIL	Affiliation; pertains to the palynological or petrographic analyses of coal and identifies the agency and/or company that conducted the analyses.
AL203	Aluminum Oxide; ' the percent weight of aluminum oxide as determined in the chemical analysis of coal ash' .....ref :ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.
AL203_L	Aluminum Oxide; 'the percent weight of aluminum oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

ALLL — Atterberg Liquid Limit; identifies the moisture content at which a sediment sample goes through the transition from a plastic to a semiliquid state.

Background Notes re: Atterberg Limits:
Atterberg Limits are an empirically developed but widely used procedure for establishing and describing the consistency of sediment.
The consistency of cohesive sediments is greatly affected by the water content of the sediment. A gradual increase of the water content may transform a dry clay from a solid state to a semisolid state, to a plastic state , and after a further moisture increase, into a liquid state; the water contents at the corresponding junction points between states are respectively known as the shrinkage limit, the plastic limit, and the liquid limit.

ANANUM — Analytical Number; represents an unique internal AGS-assigned number which identifies an analyzed sample. The ANANUM's are sequentially assigned integers beginning with 1. An ANANUM is unique for every single laboratory analysis.

ANK — Ankerite; 'the percent weight of the mineral ankerite (Ca(Mg,Fe) (CO3)2) as determined by inorganic analysis of coal'....ref: ERCB 'Data Element Description Report'.

APL — Atterberg Plastic Limit; identifies the moisture content at which a sediment sample begins to crumble when rolled out into thin threads. See ALLL (Atterberg Liquid Limit) for additional background information concerning Atterberg Limits.

ARCH_DT — Archival Date of a Sample; part of the information recorded for a sample (whole or in-part) when it is retained/stored for future reference. Code/record date as month-day-year.

ART_CONT — Air-tight Container; part of the information recorded for a sample (whole or in-part) when it is retained/stored for future reference. Code/record as Y or N to indicate whether the sample has been stored in an air-tight container.

AT_DIP — Dip of a Bedding Plane or Fault; this value can be determined from a drillhole or an adit (as reported by the ERCB). It can be measured directly from an adit, or indirectly from dipmeter logs, or derived from a series of core-bedding angle measurements (CBA). See AT_DRN, ATTITUDE and ATTNUM for additional information.

AT_DRN — Dip Direction; this value can be determined from a drillhole or an adit (as reported by the ERCB). It can be measured directly from an adit, or indirectly from dipmeter logs, or derived from a series of core-bedding angle measurements (CBA). The dip direction is reported in degrees azimuth. See AT_DIP, ATTITUDE and ATTNUM for additional information.

ATNUM — Analysis Type Number; represents an unique internal AGS-assigned number which identifies each of the different types of analyses. The ATNUMS's are sequentially assigned integers beginning with 1.

ATOMNUM — Atomic Number; represents an element's atomic number, generally used to identify Trace Elements. The assigned ATOMNUM's are integers and correspond to the elements' atomic number as identified in a Periodic Table (eg, the ATOMNUM for the element Mercury is 80).

ATTITUDE — Attitude; describes how the dip and dip direction were derived from a drillhole; ie. from dipmeter, ERCB adit, or CBA (core-bedding angle) derived.

ATTNUM — Attitude Number; represents an unique internal AGS-assigned number which identifies an ATTITUDE type. The ATTNUM's are sequentially assigned integers beginning with 1. See ATTITUDE for additional background information.

AXI_STR — Axial Strain @ Max P(1)/P(3); pertains to the Triaxial (geotechnical) test . No further description of AXI_STR has been completed to date.

Background Notes re: Triaxial Test:
A sediment specimen is encased in a rubber membrane to prevent the pressurized cell fluid (usually water) from penetrating the pores of the sediment; axial load is applied through a piston, and the volume change of the specimen during a drained test or the induced pore water pressure during an undrained test is measured; the drainage to and from the specimen can be controlled and it is possible, with some assumptions, to control the stress paths applied to the specimen; the failure plane is not forced ... the specimen is free to fail on any weak plane or, as sometimes occurs, to simply bulge.

Drainage conditions or paths followed in the triaxial test are models of specific critical design situations required for the analysis of stability in engineering practice; these are commonly designated by a two-letter symbol; the first letter refers to what happens before shear, ie. whether the specimen is consolidated ; the second letter refers to the drainage condition during shear; the three permissible drainage conditions in the triaxial test are unconsolidated-undrained (UU), consolidated-undrained (CU) and consolidated-drained (CD).

AXTNUM — Axial Trace Number; represents an unique internal AGS-assigned number which identifies the measured axial plane of a mesoscopic fold; both the trend and the plunge of the trace of the axial plane must be measured/recorded. The AXTNUM's are sequentially assigned integers beginning with 1. See PLG and TRD for additional background information.

AX_ST — Axial Strain @ Max P(1)-P(3); pertains to the Triaxial (geotechnical) test. No further description of AX_ST has been completed to date. See AXI_STR for additional background information concerning the Triaxial test.

AZM — Azimuth; 'a direction measured in degrees clockwise from the north'....ref: ERCB 'Data Element Description Report'. See Figure 1 Magnetic declination map of Alberta (ref...EMR Map MCR 701).

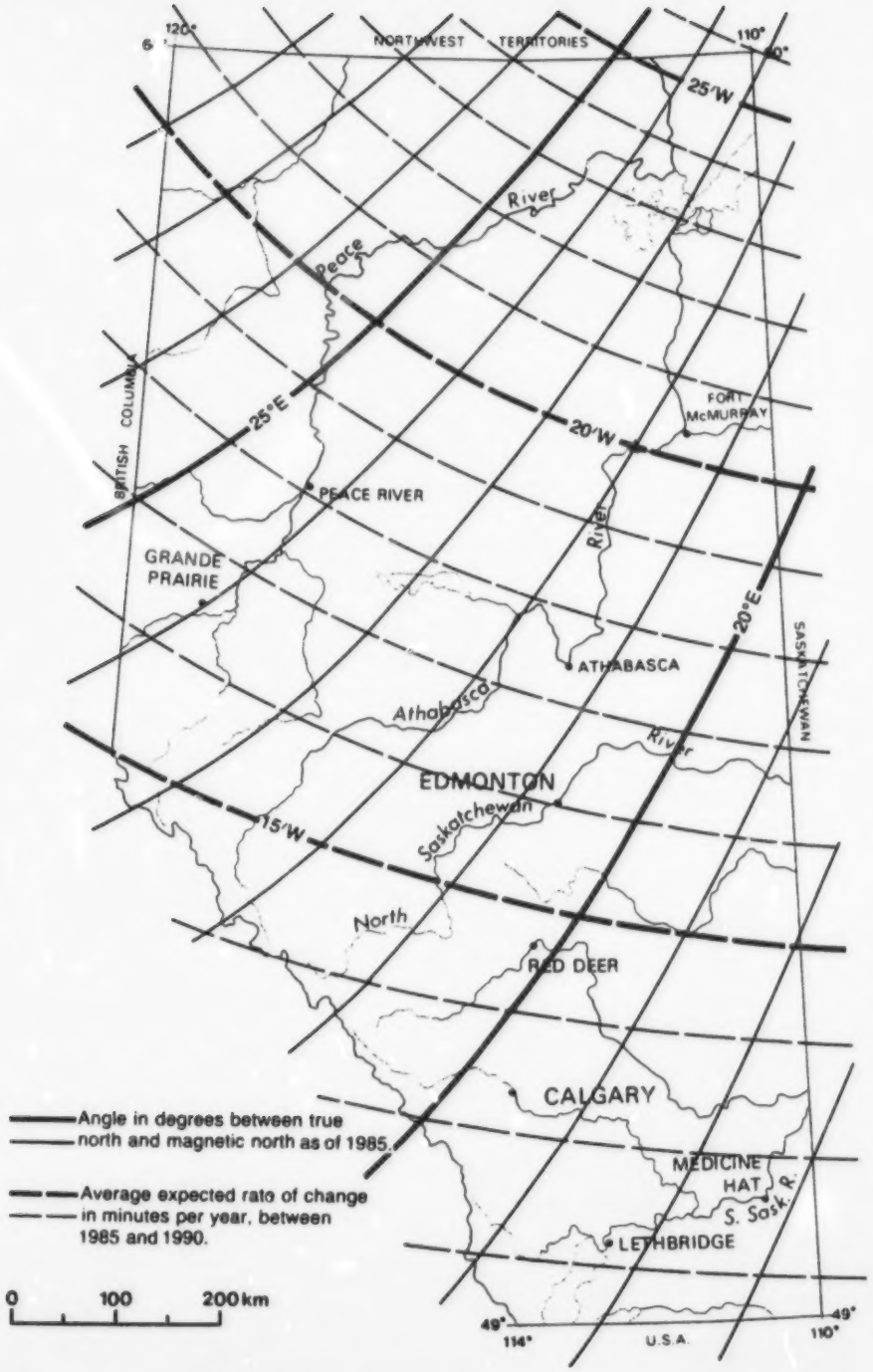

Figure 1. Magnetic declination map of Alberta (ref...EMR Map MCR 701.

AZXB — Azimuth of the X-Axis Baseline; there are a number of coal properties (primarily producing mines and advanced exploration projects) within the Province that have their own location grids; this attribute identifies the azimuth of the X-Axis of the (mine-grid) Baseline. See AZM and AZYB for additional background information.

AZYB — Azimuth of the Y-Axis Baseline; there are a number of coal properties (primarily producing mines and advanced exploration projects) within the Province that have their own location grids; this attribute identifies the azimuth of the Y-Axis of the (mine-grid) Baseline. See AZM and AZXB for additional background information.

A_APP — Analysis Approval Description; describes 'whether the analysis record has been approved or contains suspicious data'.... ref:ERCB 'Data Element Description Report'. See OKNUM for additional background information.

A_CONF — Analysis Confidentiality Description; describes 'whether or not the laboratory data (analysis data) have been made public'...ref:ERCB 'Data Element Description Report'. See CONFNUM for additional background information.

A_DT — Analysis Date; identifies the date a sample was analyzed. Code/record date as month-day-year.

A_TYP — Analysis Type Description; describes (identifies) each of the different analysis types that may be stored within the Database. A_TYP is part of the database table ANA_TYPE.

BDEN

Bulk Density; pertains to the bulk density of a sample when it is not part of the geotechnical test result for the Direct Shear and/or Triaxial tests. See BDS for additional information.

Background Note re: Bulk Density:
Bulk Density is defined as the mass of a unit volume of particles, inclusive of the water and/or air spaces between the particles.

Background Notes re: Direct Shear:
The Direct Shear test is a simple and widely used test for determining the shear strength of a sediment; the apparatus used is a shear box consisting of 2 sections, an upper and a lower section ; the lower section is fixed to a frame and the upper section moves horizontally relative to the lower section once the shear load is applied a sediment sample is placed in the box, with approximately half of the sample within each section; a shear force 'T' pulls the upper section relative to the lower, thereby creating a shear plane and corresponding shear stresses ; a normal force 'N' is applied to the plane of shear via a plate placed over the the sediment specimen; porous stones may be used at the top and bottom of the shear box to facilitate drainage.

The sample is subjected to a shear force and subsequent rupture by increasing the horizontal force 'T', either at a constant speed (strain-controlled test) or at a constant load (stress-controlled test) until 'failure is induced'; this procedure is repeated for several values of normal force 'N'; by plotting the normal stresses and corresponding shear stresses from the results of such tests, a failure envelope is obtained.
If the test is run on samples which have not undergone substantial water drainage it is commonly referred to as an 'undrained' shear test, ie. the load is applied soon after the placement of the specimen in the shear box. The sediment sample may be subjected to a sustained normal load and subsequent consolidation before the test commences; in this instance, if the test is run quickly, pore pressures are developed and the test is referred to as 'consolidated undrained'. If the test is performed very slowly so that no pore pressure develops, the test is referred to as 'consolidated drained'.

BDS — Bulk Density; pertains to the bulk density of a sample when it forms part of the geotechnical test result for the Direct Shear and/or Triaxial tests. See BDEN for additional background information concerning Bulk Density and the Direct Shear test. See AXI_STR for additional background information concerning the Triaxial test.

BKHT — Becker Hammer Test; this is a geotechnical test that records the rate of penetration in terms of number of hammer blows per unit length; the resulting value, usually expressed as 'number of blows/ft', can be related to the relative density of a material.

BSDNUM — Based_On Number; represents an unique internal AGS-assigned number which identifies the type of datapoint on which a given interpretation, within the Database, may be based. The BSDNUM's are sequentially assigned integers beginning with 1.

BSD_ON — Based_On Description; describes (identifies) each of the different types of datapoints on which an interpretation, within the Database, may be based; eg. based on core or geophysical well logs.

BSLX — Baseline Number X-Axis; there are a number of coal properties (primarily producing mines and advanced exploration projects) within the Province that have their own location grids; this attribute records the number of the X-Axis Baseline, since the baseline number may not always equal zero. See BSLY for additional background information.

BSLY — Baseline Number Y-Axis; there are a number of coal properties (primarily producing mines and advanced exploration projects) within the Province that have their own location grids; this attribute records the number of the Y-Axis Baseline, since the baseline number may not always equal zero. See BSLX for additional background information.

CAO — Calcium Oxide; 'the percent weight of calcium oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

CAO_L — Calcium Oxide; 'the percent weight of calcium oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

CAT_ID — Catalogue Identification Number as assigned by the ERCB to coal holes in the ERCB Coal Hole File; 'a unique number assigned to each entity in the data base which has no particular correspondence to any particular component'.... ref:ERCB 'Data Element Description Report'. The CAT_ID numbers are the ERCB's unique numbers for coal holes in their datafile.

CBA — Core Bedding Angle; records the bedding angle of strata as measured from the drill core; the recorded angles are measured from the core axis....as an example, bedding that is perpendicular to the core axis (ie, flat) has a core bedding angle of 90 degrees.

CBI — Composition Balance Index; pertains to a stored record on the GSC's database. No further supplemental technical information has been located to date. CBI is an attribute of PETROG_INDICES.

CCN — Coefficient of Consolidation; pertains to the Consolidation (geotechnical) test. No further description of CCN has been completed to date.

Background Note re: Consolidation Test:
'Consolidation Analysis' deals with data relating to the compressibility of sediments; when materials are loaded or stressed they deform or strain; some materials, especially clays, require a relatively long time for deformation to take place.

CH4 — Methane; 'the percent weight of methane as determined in the coal analysis'.....ref:ERCB 'Data Element Description Report'.

CKPR — Coke Pressure; pertains to a stored record on the GSC's data base. No further supplemental information has been located to date. CKPR is an attribute of COKE_PR.

CLBOT — Bottom of Coal Channel Interval; refers to the bottom interval within a lithologic description of a coal channel.

CLCT — Calcite; 'the percent weight of the mineral calcite (CaCO3) as determined by inorganic analysis of coal' ...ref: ERCB 'Data Element Description Report'.

CLTOP — Top of Coal Channel Interval; refers to the top interval within a lithologic description of a coal channel.

CLTYNUM — Coal Type Number; represents an internal unique AGS-assigned number which identifies 'the type of end use of the coal produced'....ref:ERCB 'Data Element Description Report'. The CLTYNUM's are sequentially assigned integers beginning with 1. See C_TYPE for additional background information.

CNFDY — Confidentiality Type Descriptions; describes the 'various components to distinguish amongst different types of public and confidential holes'....ref:ERCB 'Data Element Description Report'. See CNFNUM for additional background information.

CNFNUM — Confidentiality Type Number; represents an unique internal AGS-assigned number which identifies each of the Confidentiality Types (CNFDY's). The CNFNUM's are sequentially assigned integers beginning with 1. See CNFDY for additional background information.

CNF_LVL — Confidence Level re: Data Reliability; ' a subjective measure of the reliability of the data , especially the logs, on an ascending scale of confidence; the value '1' is reserved for bad holes, ie, short holes, caved holes, etc; the value '0' has the meaning not assessed'....ref:ERCB 'Data Element Description Report'. This code is used internally at and by the ERCB.

CNTRCTR_NM — Name of Mechanical Contractor; the name of the mechanical contractor who generated the datapoint; this attribute does not include the names of geophysical logging contractors....for that information see L_CNTR_NM.

CN_FR — Cone Penetration Friction; a geotechnical test result obtained from a cone penetrometer. No further description of CN_FR has been completed to date.

Background Notes re: Cone Penetrometer:
This is a device used in the field to determine undrained shear strength; like the pocket penetrometer, it is limited in accuracy and should be used in conjunction with information from other more elaborate methods and evaluations.

CN_RS — Cone Penetration Resistance; a geotechnical test result obtained from a cone penetrometer. No further description of CN_RS has been completed to date. See CN_FR for additional background information concerning the cone penetrometer.

CO2 — Carbon Dioxide; 'the percent weight of carbon dioxide as determined in the coal analysis'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

CO2_L — Carbon Dioxide; 'the percent weight of carbon dioxide as determined in the coal analysis'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

COMM — Comments; pertains to comments made on a Traverse. COMM is in the entity TRAV_PART.

COMPANY — Company; 'name of the company identified by company code'....ref:ERCB 'Data Element Description Report',ie, the name of the company responsible for generating the datapoint.

COMP_ABBREV — Company Abbreviation; 'abbreviation of the name of that company indicated by company code'....ref:ERCB 'Data Element Description Report'; see COMPANY for additional background information.

COMP_CODE — Company Code; a unique code number used to identify the company for which a code explanation hole was made ....ref:ERCB 'Data Element Description Report'; see COMPANY for additional background information.

CONFNUM — Confidentiality Type Number; represents an unique internal AGS-assigned number which identifies 'whether or not laboratory data (analysis data) have been made public' ....ref:ERCB 'Data Element Description Report. The CONFNUM's are sequentially assigned integers beginning with 1.
0=confidential or no analysis data
1=closed
0 and 1 from ERCB

CONT — Continuity of sample; describes 'the degree of continuity of the sampled interval'....ref:ERCB 'Data Element Description Report'; eg. identifies the sample as a composite and whether it includes or excludes the partings.

CONTNUM — Continuity Number; represents an unique internal AGS-assigned number which identifies 'the degree of continuity of the sampled interval'...ref:ERCB 'Data Element Description Report'. The CONTNUM's are sequentially assigned integers beginning with 1. See CONT for additional background information.

CON_PRE — Consolidation Pressure; pertains to the Consolidation (geotechnical) test. No further description of CON_PRE has been completed to date. See CCN for additional background information concerning the Consolidation test.

COORNUM — Coordinate Number; represents an unique internal AGS-assigned number which identifies the precision of the reported/measured survey coordinates of a datapoint. The COORNUM's are sequentially assigned integers beginning at 1. See C_ORG for additional background information.

COO_ACC — Coordinate Accuracy; describes 'the accuracy, in metres, to which the location has been established'....ref:ERCB 'Data Element Description Report'.

CORE_RECOV — Core Recovery (Drillhole); identifies the percentage of total core recovered for all cored intervals within a drillhole; CORE_RECOV is defined as [(total thickness of all core recovered) / (total thickness of all cored intervals,] X 100% . See RECOV for core recoveries of specific intervals within a drillhole. Core_Recov numbers from ERCB coal hole file may be from one or more cores. If from one core then CORE_RECOV is equivalent to RECOV. (Cannot distinguish the two for ERCB data.)

CORPNUM — Corporation Number; represents an unique internal AGS-assigned number which identifies the corporation or company responsible for generating the datapoint. The CORPNUM's are sequentially assigned integers beginning with 1. See COMPANY for additional background information. Every CORPNUM corresponds to an unique COMP_CODE in the relation COMP.

CPDT — Completion Date; 'completion date for drillhole and excavation, or measuring date for an outcrop'....ref:ERCB 'Data Element Description Report' ie. the completion date for any datapoint (SITID) stored in the Database. Code the date as month-day-year.

CPI — Compression Index; pertains to the Consolidation (geotechnical) test. No further description of CPI has been completed to date. See CCN for additional background information concerning the Consolidation test.

CRO3 — Chromium Trioxide; 'the percent weight of chromium trioxide as determined in the chemical analysis of coal ash' ....ref: ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

CRO3_L — Chromium Trioxide; 'the percent weight of chromium trioxide as determined in the chemical analysis of coal ash' ....ref: ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

CSG_DIAM — Casing Diameter of a Drillhole; 'the outside diameter of the casing string (in millimetres)'....ref:ERCB 'Data Element Description Report'.

CSG_TD — Casing Total Depth; pertains to the total depth of the casing string (in metres) within a drillhole.

CSNUM — Coal Seam Number; represents an unique internal AGS-assigned number which identifies 'a group of coal occurrences as a coal seam that is widely recognizable'....ref:ERCB 'Data Element Description Report'. CSNUM is assigned to 'named' seams, where the names can either be alphabetic and/or numeric. The CSNUM's are sequentially assigned integers beginning with 1. See CS_NM for additional background information.

CS_NM — Coal Seam Name/Number; 'identifies a group of coal occurrences as a coal seam that is widely recognizable' ....ref: ERCB 'Data Element Description Report'.

CTRNUM — Contractor Number; represents an unique internal AGS-assigned number which identifies the mechanical contractor (eg. the drilling, excavation or adit contractor) who generated the datapoint; CTRNUM's does not represent the unique numbers for geophysical logging contractors...see LG_CNTNUM. The CTRNUM's are sequentially assigned integers beginning with 1.

CVC — Coefficient of Volumetric Compression; pertains to the Consolidation (geotechnical) test. No further description of CVC has been completed to date . See CCN for additional background information concerning the Consolidation test.

CZNUM — Coal Zone Number; represents an unique internal AGS-assigned number which identifies 'the position of the coal occurrence to a narrow range of rock strata'....ref:ERCB 'Data Element Description Report'. The CZNUM's are sequentially assigned integers beginning with 1. See CZ_NM for additional background information.

CZ_NM — Coal Zone Name; identifies 'the position of the coal occurrence to a narrow range of rock strata'....ref:ERCB 'Data Element Description Report'.

C_ORG — Coordinates Original; identifies the data source on which the 'original' survey coordinates, of a datapoint, are based. Indirectly this attribute identifies the precision of the reported measured survey coordinates. Examples of C_ORG would include topographic maps (including the scale and date), air photos (including the scale and date) and type of mechanical survey.

C_RANK — Coal Rank Description; 'indicates the ASTM rank of the coal mined'....ref:ERCB 'Data Element Description Report'.

C_TYPE — Coal Type Description; indicates 'the type of end use of the coal produced'....ref:ERCB 'Data Element Description Report'; eg. thermal or metallurgical.

DBASE — Base of Drillhole Depth Interval; the top part of an interval of a named geological pick which has been derived from drillhole data. See DTOP for additional background information.

DDEN — Dry Density; pertains to the dry density of a sample when it is not part of the geotechnical test results for the Direct Shear and/or Triaxial tests. See DDS for additional background information.

DDS — Dry Density; pertains to the dry density of a sample when it forms part of the geotechnical test results for the Direct Shear and/or Triaxial tests. See DDEN for additional background information.See AXI_STR for additional background information concerning the Triaxial test. See BDEN for additional background information concerning the Direct Shear test.

DEP — Depth of Excavation; pertains to the 'height or depth of an excavation in metres'....ref:ERCB 'Data Element Description Report'; within the AGS Database, DEP identifies the depth of a trench or test pit.

DEVNUM — Deviation Data Number; represents an unique internal AGS-assigned number which identifies drillhole deviation data. The DEVNUM's are sequentially assigned integers beginning with 1. See AZM and DEVV for additional background information.

DEVV — Deviation Degrees as Measured from the Vertical; records the number of degrees, at a given depth (DFROM and DTO), that a drillhole deviates from the vertical (ie. a vertical hole has a DEVV of 0 degrees).

DFDPC — Final Dilatation Per Cent; pertains to the Dilatometer test. No further description of DFDPC has been completed to date.

Background Note re: Dilatometer test:
A dilatometer records the various contractions and expansions of a coal sample during carbonization at a specific, relatively slow rate of heating and then cooling.

DFROM — The upper depth to which drillhole deviation data pertains. See DEVV for additional background information.

DILNUM — Dilatometer Type Number; represents an unique internal AGS-assigned number which identifies each of the Dilatometer Test Types (DLTM_TYP). The DILNUM's are sequentially assigned integers beginning with 1. See DLTM_TYP and DFDPC for additional background information.

DIP — Dip; 'the angle in degrees at which a stratum or any other planar feature is inclined from the horizontal'....ref:ERCB 'Data Element Description Report'. DIP can be measured only at an outcrop; the outcrop can be located either on surface or underground.

DIPNUM — Dip Number ; represents an unique internal AGS-assigned number to uniquely identify measured dip data, ie, dip and dip direction. The DIPNUM's are sequentially assigned integers beginning with 1. See DIP and DIP_D for additional background information.

DIP_D — Dip Direction; represents the direction the stratum or feature dips and is reported in degrees azimuth. See AZM and DIP for additional background information. DIP_D can be measured only at an outcrop; the outcrop can be located either on surface or underground.

DLTM_TYP — Dilatometer Test Type Description; describes 'the type of dilatometer test' run on a coal sample....ref:ERCB 'Data Element Description Report'. See DFDPC for additional information concerning the Dilatometer test.

DMCPC — Maximum Contraction Per Cent; pertains to the Dilatometer test. No further description of DMCPC has been completed to date. See DFDPC for additional information concerning the Dilatometer test.

DMDPC — Maximum Dilatation Per Cent; pertains to the Dilatometer test. No further description of DMDPC has been completed to date. See DFDPC for additional information concerning the Dilatometer test.

DMXCNT — Maximum Contraction Temperature; pertains to the Dilatometer test. No further description of DMXCNT has been completed to date. See DFDPC for additional information concerning the Dilatometer test.

DMXDIT — Maximum Dilatation Temperature; pertains to the Dilatometer test. No further description of DMXDIT has been completed to date. See DFDPC for additional information concerning the Dilatometer test.

DOL — Dolomite;'the percent weight of the mineral dolomite (CaMgCO3) as determined by inorganic analysis of coal' ...ref:ERCB 'Data Element Description Report'.

DRESOLT — Resolidification Temperature; pertains to the Dilatometer test. No further description of DRESOLT has been completed to date. See DFDPC for additional information concerning the Dilatometer test.

DRLD — Data Release Date; pertains to 'the calculated date for the release of strip log forms to the public from the Record Centre'....ref:ERCB 'Data Element Description Form'. Code/report date as month-day-year.

DRL_LOG — Driller'(s) Log Available; pertains to the presence of a driller's log . Code/record as Y or N to indicate whether the available information associated with a drillhole does or does not include a driller's log.

DRNUM — Drainage Condition Number; represents an unique internal AGS-assigned number which identifies the drainage conditions associated with a Triaxial (geotechnical) test. The DRNUM's are sequentially assigned integers beginning at 1. See AXI_STR and DR_CN for additional background information concerning the Triaxial test.

DRST — Drop Shatter Test; pertains to 'the percent size stability - a measurement of resistance to breakage'....ref:ERCB 'Data Element Description Report'.

DR_CN — Drainage Condition Description; describes the types of drainage conditions associated with a Triaxial (geotechnical) test. See AXI_STR for additional background notes concerning the Triaxial test.

DSOFT	Initial Softening Temperature; pertains to the Dilatometer test. No further description of DSOFT has been completed to date. See DFDPC for additional information concerning the Dilatometer test.
DTO	Drillhole Deviation Data 'To' Depth; the lower depth to which drillhole deviation data pertains. See DEVV for additional background information.
DTOP	Top of Drillhole Depth Interval; is the bottom part of an interval of a named geological pick which has been derived from drillhole data. See DBASE for additional background information.
DT_WTR_LVL	Date of Water Level Measurement; pertains to the date that a (static) water level was measured in a drillhole. Record date as month-day-year.
ECP	Effective Cell Pressure; pertains to the Triaxial (geotechnical) test. No further description of ECP has been completed to date. See AXI_STR for additional background notes concerning the Triaxial test.
ELEV	Ground (Surface) Elevation; pertains to 'the surface elevation above sea level' of the datapoint...ref:ERCB 'Data Element Description Report'. Ground elevations are reported in metres above mean sea level.
ELEV_ACC	Elevation Accuracy; describes 'the accuracy, in metres, to which the elevation has been established'....ref:ERCB 'Data Element Description Report'.
ELEVNUM	Elevation Number; represents an unique internal AGS-assigned number which identifies the precision of the reported/measured survey coordinates of a datapoint. The ELEVNUM's are sequentially assigned integers beginning at 1. See E_ORG for additional background information.

ELKB — Kelly Bushing Elevation; pertains to the elevation of a drillhole's Kelly Bushing. The Kelly Bushing elevations are reported in metres above mean sea level.

EQM — Equilibrium Moisture; 'the percentage weight of moisture that a sample will absorb and hold when it is in equilibrium with an atmosphere at 96%-97% relative humidity'....ref:ERCB 'Data Element Description Report'. Equilibrium Moisture may also be referred to as 'Capacity Moisture' or 'Inherent Moisture' or 'Bed Moisture'. See PMAD and PMAR for additional background information concerning coal moistures.

EXIN — Exinite; pertains to maceral analysis and is defined as 'the percent weight of a maceral group composed of alginite, cutinite, resinite and sporinite' ...ref:ERCB 'Data Element Description Report'. No further description of EXIN has been completed to date.

E_ORG — Elevations' Original; describes and identifies the data source on which the 'original' elevation value/determination ,of a datapoint, is based; eg. 1:50000 NTS sheets, 1:5000 mine grid and 1:1000 air photos.

E_RES — Electrical Resistivity; 'the measure of resistance (ohms/metre) to the flow of electric current through a particle of ash'....ref:ERCB 'Data Element Description Report'.

E_RES_EXP — Electrical Resistivity Exponent; 'the exponent to which the 'electrical resistivity' field is to be raised'....ref:ERCB 'Data Element Description Report'. See E_RES for additional background information.

FE2O3 — Iron Oxide; 'the percent weight of iron oxide as determined in the chemical analysis of coal ash'....ref: ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

FE2O3_L — Iron Oxide; 'the percent weight of iron oxide as determined in the chemical analysis of coal ash'....ref: ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

FIN_DT — Completion (finish) Date of Petrographic or Palynological Analysis; pertains to the completion date of the petrographic/palynological analysis of a particular coal sample. Report date as month-day-year.

FLNG — Degree of Fouling Description; describes and identifies 'the tendency of the dry ash particles to adhere to the boiler tubes'....ref:ERCB 'Data Element Description Report'.

FLPG — Flash Pyrolysis Gas Product; 'the percent weight of combustible and non-combustible gaseous products as determined by flash pyrolysis'....ref:ERCB 'Data Element Description Report'. No further description of FLPG has been completed to date.

Background Note re: Flash Pyrolysis:
The pyrolysis of coal involves the liquifaction of the coal. The process uses a relatively high temperature to drive off the the volatile matter from a coal sample, leaving behind a residue of coke or char.
Flash Pyrolysis requires that the coal is heated to the active decomposition temperature very rapidly; when heated in this manner, the coal tends to undergo more extensive fragmentation and leads to enhanced product yields.

FLPL — Flash Pyrolysis Liquid Product; 'the percent weight of water and water-soluble products as determined by flash pyrolysis' ....ref:ERCB 'Data Element Description Report'. No further description of FLPL has been completed to date. See FLPG for additional background information concerning Flash Pyrolysis.

FLPS — Flash Pyrolysis Solid Product; 'the coke or char given as a percentage by weight of the original coal sample determined by flash pyrolysis'....ref:ERCB 'Data Element Description Report'. No further description of FLPS has been completed to date. See FLPG for additional background information concerning Flash Pyrolysis.

FLPT — Flash Pyrolysis Tar Product; 'the percent weight of hydrocarbons and oxygen-containing products as determined by Flash Pyrolysis'...ref:ERCB 'Data Element Description Report'. No further description of FLPT has been completed to date. See FLPG for additional background information concerning Flash Pyrolysis.

FMNUM — Geological Formation Number; represents an unique internal AGS-assigned number which identifies the geological formation. The FMNUM's are sequentially assigned integers beginning with 1. See FM_NM for additional background information.

FM_NM — Geological Formation Name; the name of a geological formation.

FOULNUM — Fouling Number; represents an unique internal AGS-assigned number which identifies 'the tendency of the dry ash particles to adhere to the boiler tubes'....ref:ERCB 'Data Element Description Report'. The FOULNUM's are sequentially assigned integers beginning with 1. See FLNG for additional background information.

FSAG — Fischer Assay Gas Product; 'the percent weight of combustible and non-combustible gaseous products as determined by the Fischer Assay'....ref:ERCB 'Data Element Description Report'. No further description of FSAG has been completed to date.

Background Note re: Fischer Assay:
The Fischer Assay determines the amount of oil, water, gas, and spent residue which a coal sample yields when it is heated in a retort according to a specified temperature program.

FSAL — Fischer Assay Liquid Product; 'the percent weight of water and water-soluble products as determined by Fischer Assay'....ref:ERCB 'Data Element Description Report'. No further description of FSAL has been completed to date. See FSAG for additional background information concerning the Fischer Assay.

FSAS — Fischer Assay Solid Product; identified as the 'the coke or char given as a percentage by weight of the original coal sample determined by Fischer Assay'....ref:ERCB 'Data Element Description Report'. No further description of FSAS has been completed to date. See FSAG for additional background information concerning the Fischer Assay.

FSAT — Fischer Assay Tar Product; 'the percent weight of hydrocarbons and oxygen-containing products as determined by Fischer Assay'....ref:ERCB 'Data Element Description Report'. No further description of FSAT has been completed to date. See FSAG for additional background information concerning the Fischer Assay.

FSI — Free Swelling Index; 'the index number which best conforms to a set standard in the Free Swelling Index test'....ref:ERCB 'Data Element Description Report'.

Background Note re: Free Swelling Index:
In the FSI test, a small sample of powdered coal is placed in a crucible and heated at a rapid, and specified rate, to about 800 degrees C. The resulting degree of swelling is assessed by comparing the profile of the coke product with a series of reference profiles.
Swelling indices of between 0 & 9 are possible; 0 indicates non-coherent residue, 1 indicates coherent but non-swollen residue and 1 1/2 to 9 relate to coherent, swollen residue; based on these numbers, a coal may be described as non-caking, non-swelling, low-swelling, medium-swelling, or high-swelling.
It should be noted that that this is a pseudo-quantitative test and the resultant coke button shapes may be subject to various interpretations.

GAL — Galena; 'the percent weight of the mineral galena (PbS) as determined by inorganic analysis of coal'....ref:ERCB 'Data Element Description Report'.

GDDM — Giesler Plastometer Dial Divisions per Minute; 'a measurement of fluidity in dial divisions per minute' as determined by the Giesler Plastometer test....ref:ERCB 'Data Element Description Report'. No further description of GDDM has been completed to date.

Background Notes re: Giesler Plastometer test:
Plastometers are used to study the plastic behavior of coal when heated slowly under prescribed conditions. The principle involves the resistance offered to the rotation of a stirrer situated within a coal sample. In the Giesler Plastometer test, a constant torque is applied to the stirrer and the rate of rotation (dial divisions per minute) is progressively measured with respect to temperature.
Maximum fluidity measurements can range from low values for non-reactive coals to 1000000 for coals of high fluidity.
The primary use of this test is to establish the suitability of a coal or blend of coals for coke manufacture .

GEOL — Geologist; identifies the person responsible for the interpretation of the available data of a datapoint (SITID), stored in the AGS Database. Code/report data by surname followed by the initial(s) of first name(s).

GKAG — Gray-King Assay Gas Product; 'the percent weight of combustible and non-combustible gaseous products as determined by the Gray-King Assay'....ref:ERCB 'Data Element Description Report'. No further description of GKAG has been completed to date.

Background Notes re: Gray-King Assay:
This test involves the heating of a finely ground sample of coal in a horizontal tube, at a relatively slow rate, to a temperature of 600 degrees C. The profile (and form) of the residue is compared with standard profiles corresponding to indices A to G and G1 to G2.
The above indices describe cokes which range from those which are non-coherent or non-caking (Type A) to those which are hard but of the same volume as the original coal (Type G). For those that swell slightly, up to the extent of filling the tube, profiles G1 and G2 apply.
For those coals that have greater swelling tendencies, the procedure includes mixing an inert material with the coal sample in amounts so that, upon carbonization, a residue of a profile similar to Type G is given. The index is then calculated as G3 to G14, where the number indicates the minimum amount of inert material in grams per 20 grams of coal sample, that is required to give a coke profile comparable to that of G.
While the indices G to G14 indicate the tendency of a coal to swell, the test also indicates the coal's ability to agglomerate, with or without inert material and to form a coherent coke.

GKAL — Gray-King Assay Liquid Product; 'the percent weight of water and water-soluble products as determined by Gray-King Assay'....ref:ERCB 'Data Element Description Report'. No further description of GKAL has been completed to date. See GKAG for additional background information concerning the Gray-King Assay.

GKAS — Gray-King Assay Solid Product; identified as 'the coke or char given as a percentage by weight of the original coal sample determined by Gray-King Assay'....ref:ERCB 'Data Element Description Report'. No further description of GKAS has been completed to date. See GKAG for additional background information concerning the Gray-King Assay.

GKAT — Gray-King Assay Tar Product; 'the percent weight of hydrocarbons and oxygen-containing products as determined by Gray-King Assay'....ref:ERCB 'Data Element Description Report'. No further description of GKAT has been completed to date. See GKAG for additional background information concerning the Gray-King Assay.

GKHV — Gray-King Assay Heating Value; identified as 'the measure of heat in megajoules per cubic metre obtained by complete combustion of the gaseous products as determined by Gray-King Assay'....ref:ERCB 'Data Element Description Report'. No further description of GKHV has been completed to date. See GKAG for additional background information concerning the Gray-King Assay.

GK_ID — Gray-King Assay Index Designation; 'the coke type as determined by comparison of the solid residue of the Gray-King Assay with a standard' profile....ref:ERCB 'Data Element Description Report'. No further description of GK_ID has been completed to date. See GKAG for additional background information concerning the Gray-King Assay.

GPFR — Giesler Plastometer Fluidity Temperature Range; identified as the temperature difference between the GPFT (Giesler Plastometer Maximum Fluid Temperature) and GPSL (Giesler Plastometer Solidification Temperature....defined as the temperature at a certain minimum dial-divisions per minute). No further description of GPFR has been completed to date. See GDDM for additional background information concerning the Giesler Plastometer test.

GPFT — Giesler Plastometer Maximum Fluid Temperature; identified as 'the temperature in degrees Celsius at which point coal attains its maximum fluidity' as determined by the Giesler Plastometer test....ref:ERCB 'Data Element Description Report'. No further description of GPFT has been completed to date. See GDDM for additional background information concerning the Giesler Plastometer test.

GPNUM — Geological Group Number; represents an unique internal AGS-assigned number which identifies 'the gross stratigraphic position of a coal occurrence'....in this case, the Stratigraphic Group. The GPNUM's are sequentially assigned integers beginning with 1. See GRP_NM for additional background information.

GPSL	Giesler Plastometer Solidification Temperature; 'the temperature in degrees Celsius at which the coal solidifies' as determined by the Giesler Plastometer test...ref:ERCB 'Data Element Description Report'. No further description of GPSL has been completed to date. See GDDM for additional background information concerning the Giesler Plastometer test.
GPST	Giesler Plastometer Initial Softening Temperature; 'the initial softening temperature in degrees Celsius' as determined by the Giesler Plastometer test.....:ERCB 'Data Element Description Report'. No further description of GPST has been completed to date. See GDDM for additional background information concerning the Giesler Plastometer test.
GRP_NM	Geological Group Name; identifies the name of a Geological Group.
GRYNUM	Gray-King Assay Index Number; represents an unique internal AGS-assigned number which identifies the Gray-King profiles/indices. The GRYNUM's are sequentially assigned integers beginning with 1. See GK_ID and GKAG for additional background information concerning the Gray-King Assay.
HAZNUM	Drillhole Hazard Number; represents an unique internal AGS-assigned number which identifies 'an indicator of potential hazard in a drillhole'....ref:ERCB 'Data Element Description Report'. The HAZNUM's are sequentially assigned integers beginning with 1. See HAZ_DESC for additional background information.
HAZ_DESC	Drillhole Hazard Description; represents 'an indicator of potential hazard in a drillhole'....ref:ERCB 'Data Element Description Report'.
HEIG	Height, in metres, of an adit drivage.

HGI — Hardgrove Grindability Index; pertains to 'an index indicating how easily coal is pulverized under prescribed conditions'....ref:ERCB 'Data Element Description Report'.

Background Notes re: Hardgrove Grindability Index test:
The Hardgrove Grindability Index is the most common method of representing a coal's grindability. A prepared sample receives a specific amount of grinding energy in a miniature pulverizer, the product is screened and the Hardgrove Index calculated from the amount of material that has been reduced to less than 74 microns.
Hardgrove Indices range from 20 to 110+; higher numbers represent a coal that is more easily ground.
The grindability of coal and the grinding performance are important parameters used in the design and operation of milling equipment. Grinding facilities should always be designed to accommodate the least grindable coal expected .

HOLE_DIAM — Drillhole Diameter; identifies 'the diameter of the drilling bit in millimetres'....ref:ERCB 'Data Element Description Report'.

HVADB — Heating Value (Air-Dried Basis); identifies the 'amount of heat generated by completely combusting coal in an excess of oxygen'...ref:ERCB 'Data Element Description Report'. Within the AGS Database, Heating Value is stored as Megajoules per kilogram.

Background Notes re: Heating Value:
The Heating Value is measured by burning a sample of coal, usually air-dried, in a standard bomb calorimeter, in excess oxygen. The gross heating value represents the total heat available from a coal as measured by standard methods when all combustion products are returned to ambient temperatures. Common Heating Values, and their equivalents, which are measured follow:

1MJ/kg = 429.92 Btu/lb = 238.846 cal/g

HVARB — Heating Value (As Received Basis); identifies the 'amount of heat generated by completely combusting coal in an excess of oxygen'...ref:ERCB 'Data ElementDescription Report'. Within the AGS Database, Heating Value is stored as Megajoules per kilogram. See HVADB for additional background information concerning Heating Value.

IBD — Initial Bulk Density; pertains to the initial bulk density of a sample when it forms part of the test results for the (geotechnical) Consolidation test. No further description of IBD has been completed to date. See CCN for additional background information concerning the Consolidation test.

IDD — Initial Dry Density; pertains to the initial dry density of a sample when it forms part of the test results for the (geotechnical) Consolidation test. No further description of IBD has been completed to date. See CCN for additional background information concerning the Consolidation test.

INC — Inclination; records the degrees of inclination, including positive (upslope) or negative (downslope), as it pertains to the slope of an adit drivage or a leg of a measured traverse.

INCNUM — Increment Number; represents an unique internal AGS-assigned number which identifies the incremental sample number as it applies to the Consolidation (geotechnical) test. The INCNUM's are sequentially assigned integers beginning with 1. See INC_NM for additional background information.

INC_NM — Increment Number Description; identifies the number of the incremental sample as it applies to the Consolidation (geotechnical) test. See CCN for additional background notes concerning the Consolidation test.

INMAC — Inert Macerals Content; pertains to and identifies the percent, by weight, of inert macerals contained within a coal sample. No further description of INMAC has been completed to date.

INRT — Inertinite; pertains to maceral analysis and is defined as 'the percent weight of a maceral group composed of fusinite, semifusinite, micrinite, macrinite and sclerotinite' ....ref: ERCB 'Data Element Description Report'. No further description of INRT has been completed to date.

INTD — Date of Geological Interpretation; the completion date of the geological interpretation. Code/report date as month-day-year.

INVR	Intermediate Vitrinite Reflectance; pertains to part of the data generated from the petrographic analysis of polished coal blocks; the Intermediate Vitrinite Reflectance is recorded as a %. No further description of INVR has been completed to date.
IVR	Initial Void Ratio; pertains to the initial void ratio of a sample when it forms part of the test results for the geotechnical Consolidation test. No further description of IVR has been completed to date. See CCN for additional background information concerning the Consolidation test.
IWC	Initial Water Content; pertains to the initial water content of a sample when it forms part of the geotechnical test results for the Triaxial and/or Direct Shear and/or Consolidation tests. See AXI_STR for additional background information concerning the Triaxial test. See BDEN for additional background information concerning the Direct Shear test. See CCN for additional background information concerning the Consolidation test.
JINUM	Joint Infilling Number; represents an unique internal AGS-assigned number which identifies the material that has infilled noted/described joints. The JINUM's are sequentially assigned integers beginning with 1. See JNT_IN for additional background information.
JNT	Number of Joints; records the number of joints noted/described within an interval. No further description of JNT has been completed to date.
JNT_IN	Joint Infilling Description; describes the type of material that has infilled the noted/described joints. No further description of JNT_IN has been completed to date.
JNT_ST	Status of Joints Description; describes the status of a noted/described joint. No further description of JNT_ST has been completed to date.
K2O	Potassium Oxide; 'the percent weight of potassium oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

K2O_L — Potassium Oxide; 'the percent weight of potassium oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

KAOL — Kaolinite; 'the percent weight of the mineral kaolinite (Al4 Si4 O10 (OH)8) as determined by inorganic analysis of coal' ....ref:ERCB 'Data Element Description Report'.

LABNUM — Lab Number; represents an unique internal AGS-assigned number which identifies the laboratory that conducted the analytical work on a sample. The LABNUM's are sequentially assigned integers beginning with 1. See LAB_NM for additional background information.

Note: A sample can be split and sent to different labs. In this case, the SAMNUM would be the same, the ANANUM may or may not be equal and the LABNUM would be different.

LAB_NM — Name of Laboratory; pertains to the name of the laboratory that conducted the analytical work on a given sample.

LAT — Latitude; 'the angular distance north of the equator' ....ref': ERCB 'Data Element Description Report'. No further description of LAT has been completed to date.

LBASE — Base of Drillhole Interval with a Lithologic Description; refers to and is equivalent to the bottom part of the depth interval within a drillhole's lithologic description.

LBOT — Bottom of Outcrop Interval with a Lithologic Description; refers to and is equivalent to the bottom part of an outcrop interval with a lithologic description.

LENG	Length of Excavation; pertains to the 'length of the excavation in metres as measured along the bottom' ....ref: ERCB 'Data Element Description Report. Within the AGS Database, LENG identifies the length of an adit, a test pit or a trench.
LGCNTNUM	Logging Contractor Number; represents an unique internal AGS-assigned number which identifies the geophysical logging contractor who generated the geophysical logs. The LGCNTNUM's are sequentially assigned integers beginning with 1. See L_CNTR_NM for additional background information.
LITHNUM	Lithologic Interval Number; represents an unique internal AGS-assigned number which identifies each of the lithologic intervals contained within the Database. The LITHNUM's are sequentially assigned integers beginning with 1.
LOGNUM	Log Type Number; represents an unique internal AGS-assigned number which identifies the different types of down-hole geophysical logs. The LOGNUM's are sequentially assigned numbers beginning with 1. See LOG_TYPE for additional background information.
LOG_CODE	Log Type Code; represents a string of LOGNUM's to identify the types of down-hole geophysical logs that exist for a particular drillhole. Code/report LOG_CODE as ##-##-## etc, where '##' is a specific LOGNUM. See LOG_TYPE for additional background information.
LOG_TYPE	Log Type Description; identifies the 'type of log associated with the coal hole'....ref:ERCB 'Data Element Description Report'. No further description of LOG_TYPE has been completed to date.
LONG	Longitude; 'the angular distance west of Greenwich' ....ref: ERCB 'Data Element Description Report'. No further description of LONG has been completed to date.

LSD — Legal Subdivision; 'legal subdivision, the smallest division in the Dominion/Alberta Land Survey System. There are 16 LSD's within a section'....ref:ERCB 'Data Element Description Report'.

Background Notes re:Dominion/Alberta Land Survey System:
Most areas covered by the Township grid in Alberta are in the Third System of Township Surveys.
Under this System, land is designated as being West of the 4th Meridian (110 degree line of longitude), West of the 5th Meridian (114 degree line of longitude) or West of the Sixth Meridian (118 degree line of longitude). As noted, the meridians are lines of longitude that run north and south through Alberta. The 4th Meridian forms the the border between Alberta and Saskatchewan, the 5th Meridian runs through Stony Plain and Calgary, and the 6th Meridian passes near Debolt and Jasper.
Between the meridians are columns called Ranges which are numbered in consecutive order moving westward from each meridian.
Townships are rows which cross meridians and Ranges. The row adjacent to the U.S. border is called Township 1, the next row northward is Township 2, and so on up to to Township 126 which is the row adjacent to the Northwest Territories' border.
The word 'township' is also used to describe the area formed by the intersection of a township row with a range; this township is about 6 miles square and contains 36 sections, each about 1 mile square. The 36 sections within a township are numbered in a snake-like-fashion starting from the southeast corner of the section.
Land (excepting that which has been subdivided) is legally described according to its geographical location, ie, by meridian, range, township, section and legal subdivision (LSD) , a term that identifies a particular 40 acre tract within a section.
Figure 2 has been included to further clarify/explain the common terminology of the Third System of Township Surveys.

LSDM — Legal Subdivision Modifier; identifies the location of a SITID to a particular quadrant of a legal subdivision (LSD). Code/report LSDM as NW, NE, SW or SE. See LSD for additional background information concerning the Third System of Township Survey.

LTOP — Top of Outcrop Interval; refers to and is equivalent to the top part of an outcrop interval with a lithologic description.

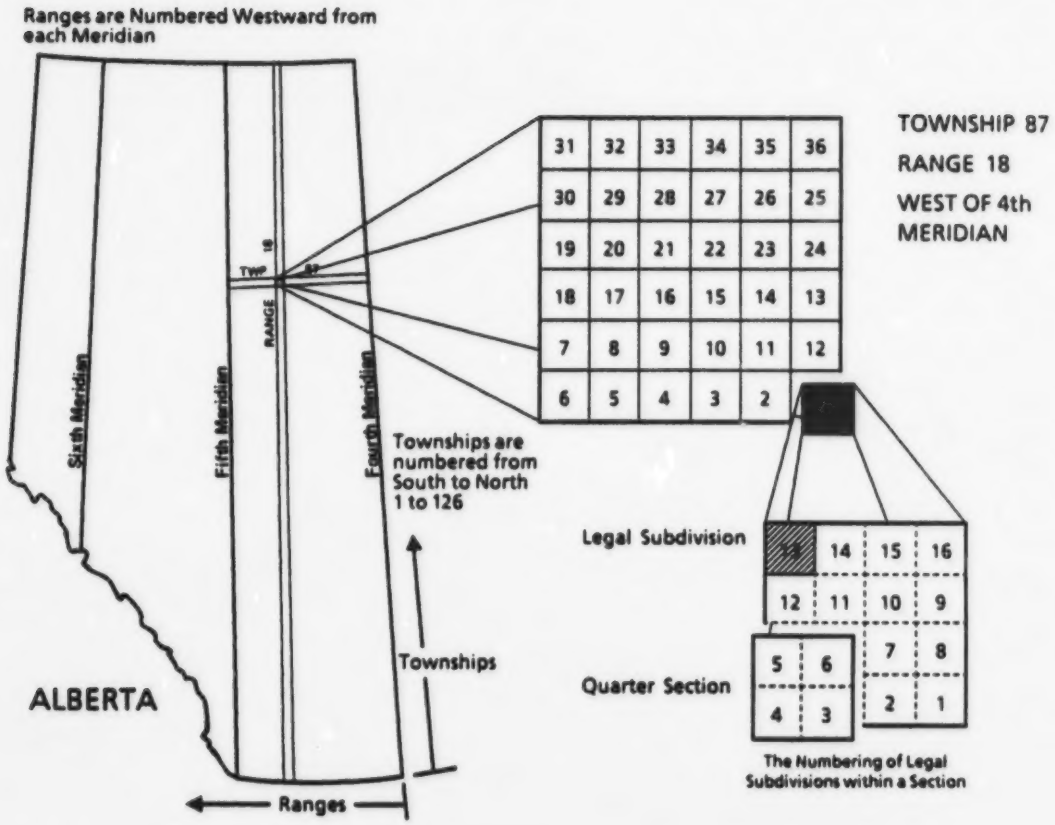

Figure 2. Alberta/Dominion Survey System (Maps Alberta Catalogue '88 - '89; AFLW)

LTOPP	Top of Drillhole Interval with a Lithologic Description; refers to and is equivalent to the top part of the depth interval within a drillhole's lithologic description.
L_CNTR_NM	Name of Geophysical Logging Contractor; the name of the geophysical logging contractor who generated the down-hole geophysical logs.
L_CTGY	Lithologic Category Description; categorizes the lithologic type descriptions (L_TYP) into one of the following categories: No_Data, Unconsolidated, or Consolidated. See L_TYP for additional background information.
L_LEG	Length of Leg of Traverse; records, in metres, the length of a particular leg of a specified traverse.
L_L_ADJ	Lithologic Intervals Adjusted to Geophysical Log Depths; denotes whether lithologic intervals for a particular drillhole have been adjusted to reflect geophysical log depths. Code as Y or N to reflect said status of the lithologic intervals of the drillhole.
L_REMX	Lithologic Interval Remarks; remarks associated with a lithologic interval.
L_S_NO	Lab Sample Number; 'an identifier supplied by the laboratory for its identification of the sample'....ref:ERCB ....'Data Element Description Report'.
L_TYP	Lithologic Type Description; describes and identifies the primary lithology of a lithologic interval.

MAINUM — Main Lithology Number; represents an unique internal AGS-assigned number which identifies the 'main' lithology types. The MAINUM's are sequentially assigned integers beginning with 1 (and may continue on up to 99). Integers 1 to 10 inclusive have been reserved for L_CTGY type 'No_Data'.

Integers 11 to 40 inclusive have been reserved for L_CTGY type 'Unconsolidated'. Integers 41 to 99 inclusive have been reserved for L_CTGY type 'Consolidated'. See L_CTGY and L_TYP for additional background information.

MAL_CITY — Identifies the 'city' part of a (coal) company's mailing address.

MAL_COMP_NAM — Identifies the 'company name' part of a (coal) company's mailing address.

MAL_PC — Identifies the 'postal code' part of a (coal) company's mailing address.

MAL_PO_BOX — Identifies the 'post office box number' part of a (coal) company's mailing address.

MAL_PROV — Identifies the 'province' part of a (coal) company's mailing address.

MAL_ST — Identifies the 'street name/number' part of a (coal) company's mailing address.

MAL_SUITE_NO — Identifies the 'suite number' part of a (coal) company's mailing address.

MASS_STD — Mass of Stored Sample; part of the information recorded for a sample (whole or in-part) when it is retained for future reference. Code MASS_STD in units of 'kilograms'.

MBRNUM — Geological Member Number; represents an unique internal AGS-assigned number which identifies 'the position of the coal occurrence to a narrow range of rock strata'....ref: ERCB 'Data Element Description Report'. For this attribute, 'the position' is the stratigraphic member. The MBRNUM's are sequentially assigned integers beginning with 1. See MBR_NM for additional background information.

MBR_NM Geological Member Name; describes and identifies 'the position of the coal occurrence to a narrow range of rock strata'....ref:ERCB 'Data Element Description Report'. For this attribute, 'the position' is the stratigraphic member.

MCHD Microhardness; 'a measure of coal hardness measured in kilograms / square metre'....ref:ERCB 'Data Element Description Report'. No further description of MCHD has been completed to date.

MCOM Mining Company Name; the name of a specific coal mining company.

MER Meridian; 'the meridian number used within the Dominion/Alberta Land Survey defined as: The Province is divided into three areas, bounded by meridians. These areas are referred to as West of the Fourth (110o), Fifth (114o) and Sixth (118o) Meridians. These Meridians correspond to specific longitudinal degrees'....ref:ERCB 'Data Element Description Report'. See LSD for additional background information concerning the Third System of Township Survey.

METE Metres East or West from the Reference Corner; 'the distance in metres in the east or west direction' from the reference corner (RCNR) of the reference section (RSEC)....ref:ERCB 'Data Element Description Report'. Code/report 'east' coordinates (from the RCNR) as positive values and 'west' coordinates (from the RCNR) as negative values. See LSD for additional background information concerning the Third System of Township Survey.

METN Metres North or South from the Reference Corner; 'the distance in metres in the north or south direction' from the reference corner (RCNR) of the reference section (RSEC)....ref:ERCB 'Data Element Description Report'. Code/report 'north' coordinates (from the RCNR) as positive values and 'south' coordinates (from the RCNR) as negative values. See LSD for additional background information concerning the Third System of Township Survey.

MGO Magnesium Oxide; 'the percent weight of magnesium oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

MGO_L — Magnesium Oxide; 'the percent weight of magnesium oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

MKRNUM — Geological Marker Number; represents an unique internal AGS-assigned number which identifies a specific geological marker horizon or unit. The MKRNUM's are sequentially assigned integers beginning with 1. See MKR_TYPE for additional background information.

MKR_TYPE — Geological Marker Description; describes and identifies the different types of marker horizons or units stored in the Database.

MNAM — Coal Mine Name; pertains to the 'name assigned to a coal mine'....ref:ERCB 'Data Element Description Report'.

MNGNUM — Mine Grid Benchmark Number; represents an unique internal AGS-assigned number which identifies a specific mine grid benchmark. The MNGNUM's are sequentially assigned integers beginning with 1.

MNMN — Pellets: Mean of Minimum Reflectance; pertains to part of the data generated from the petrographic analysis of coal pellets; the Mean of Minimum Reflectance is recorded as a %. No further description of MNMN has been completed to date.

MNMTNUM — Type of Mining Method Number; represents an unique internal AGS-assigned number which identifies the manner or method of coal extraction'...ref:ERCB 'Data Element Description Report'. The MNMTNUM's are sequentially assigned integers beginning with 1. See M_METH for additional background information.

MNMX — Pellets: Mean of Maximum Reflectance; pertains to part of the data generated from the petrographic analysis of coal pellets and is defined as 'the ratio of the intensity of reflected radiation to that of the radiation incident on a surface' ....ref: ERCB 'Data Element Description Report; the Mean of Maximum Reflectance is recorded as a % and is the average of (at least) 100 maximum reflectance readings. No further description of MNMX has been completed to date.

MNO — Magnesium Oxide; 'the percent weight of manganese oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

MNOM — Coal Mine Number; 'an identifier assigned to a coal mine that is unique to that mine'...ref:ERCB 'Data Element Description Report'. The Coal Mine Number is assigned by the ERCB. No further description of MNOM has been completed to date.

MNO_L — Magnesium Oxide; 'the percent weight of manganese oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

MNRDM — Pellets: Mean of Random Reflectance; pertains to part of the data generated from the petrographic analysis of coal pellets; the Mean of Random Reflectance is recorded as a %. No further description of MNRDM has been completed to date.

MNTYNUM — Coal Mine Type Number; represents an unique internal AGS-assigned number which identifies 'the type of coal mine (surface or underground)'....ref:ERCB 'Data Element Description Report'. The MNTYNUM's are sequentially assigned integers beginning with 1. See M_TYPE for adoitional background information.

MNVR — Minimum Vitrinite Reflectance; pertains to part of the data generated from the petrographic analysis of polished blocks; the Minimum Vitrinite Reflectance is recorded as a %. No further description of MNVR has been completed to date.

MODNUM — Lithology Modifier Number; represents an unique internal AGS-assigned number 'to better describe a particular rock type or geological unit'....ref:ERCB 'Data Element Description Report'. The MODNUM's are sequentially assigned integers beginning with 100. Integers 100 to 199 inclusive have been reserved for 'compositional type' modifiers . Integers 200 to 299 have been reserved for 'descriptive type' modifiers. The Database has been designed to accommodate up to 2 MODNUM's per MAINUM. See L_TYP, MAINUM, M_DESC and M_TYP for additional background information.

MOIST — Specific Gravity Moisture Description; describes 'the moisture basis of the coal sample analyzed for the purposes of determining specific gravity'....ref:ERCB 'Data Element Description Report'. No further description of MOIST has been completed to date.

MOO3 — Molybdenum Trioxide; 'the percent weight of molybdenum trioxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

MOO3_L — Molybdenum Trioxide; 'the percent weight of molybdenum trioxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

MSTNUM — Specific Gravity Moisture Number; represents an unique internal AGS-assigned number which identifies 'the moisture basis of the coal sample analyzed for the purposes of determining specific gravity'....ref:ERCB 'Data Element Description Report'. See MOIST for additional background information.

MTIL — Montmorillinite and Illite; 'the percent weight of the minerals montmorillonite and illite (Al2 Si4 O10 (OH)2 x XH2O) as determined by inorganic analysis of coal' ....ref: ERCB 'Data Element Description Report'.

MXVR — Maximum Vitrinite Reflectance; pertains to part of the data generated from the petrographic analysis of polished blocks; the Maximum Vitrinite Reflectance is recorded as a %. No further description of MXVR has been completed to date.

M_DESC — Lithology Modifier Description; forms part of the stored lithologic data 'to better describe a particular rock type or geological unit'....ref:ERCB 'Data Element Description Report'. See L_TYP, MAINUM, MODNUM and M_TYP for additional background information.

M_LGL_S — Coal Mine Legal Status; identifies and describes 'the legal status of a coal mine'....ref:ERCB 'Data Element Description Report'.

M_METH — Type of Mining Method Description; identifies and describes 'the manner or method of coal extraction'....ref:ERCB 'Data Element Description Report'.

M_TYP — Lithologic Modifier Type Description; categorizes the lithologic modifier descriptions (M_DESC) into one of the following categories: Compositional or Descriptive. See MODNUM and M_DESC for additional background information.

M_TYPE — Coal Mine Type Description; identifies 'the type of coal mine (surface or underground)'....ref:ERCB 'Data Element Description Report'.

NA2O — Sodium Monoxide; 'the percent weight of sodium monoxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

NA2O_L — Sodium Monoxide; 'the percent weight of sodium monoxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

NIO — Nickel Oxide; 'the percent weight of nickel oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

NIO_L — Nickel Oxide; 'the percent weight of nickel oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

NMAX — Pellets: Number of Measurements of Maximum Reflectance; identifies the number of readings of maximum reflectance that have been recorded for a given coal pellet. The number of measurements is required to determine the mean of maximum reflectance (MNMX) and the standard deviation of the maximum reflectance (SDMX).

NMIN — Pellets: Number of Measurements of Minimum Reflectance; identifies the number of readings of minimum reflectance that have been recorded during the petrographic analysis of a given coal pellet. The number of measurements is required to determine the mean of minimum reflectance (MNMN) and the standard deviation of the minimum reflectance (SDMN).

NOM — Number of Measurements; identifies the number of readings that have been recorded during the petrographic analysis of an oriented coal sample.

NRDM — Pellets: Number of Measurements of Random Reflectance; identifies the number of readings of random reflectance that have been recorded during the petrographic analysis of a given coal pellet. The number of measurements is required to determine the mean of random reflectance (MNRDM) and the standard deviation of the random reflectance (SDRDM).

NSTR — Normal Stress (Sigma); pertains to the 'normal stress' of a sample when it is part of the geotechnical test result for the Direct Shear test. See BDEN for additional background information concerning the Direct Shear test.

NTSP — National Topographic System (NTS): Primary Sheet; defines a large, unique quadrangle that comprises an area 8 degrees longitude by 4 degrees latitude. Each of these large blocks has an assigned '1 to 3 digit' number. Figure 3 illustrates the NTS Primary Sheets (Number Units) and the NTS Secondary Sheets (Letter Units) for Alberta.

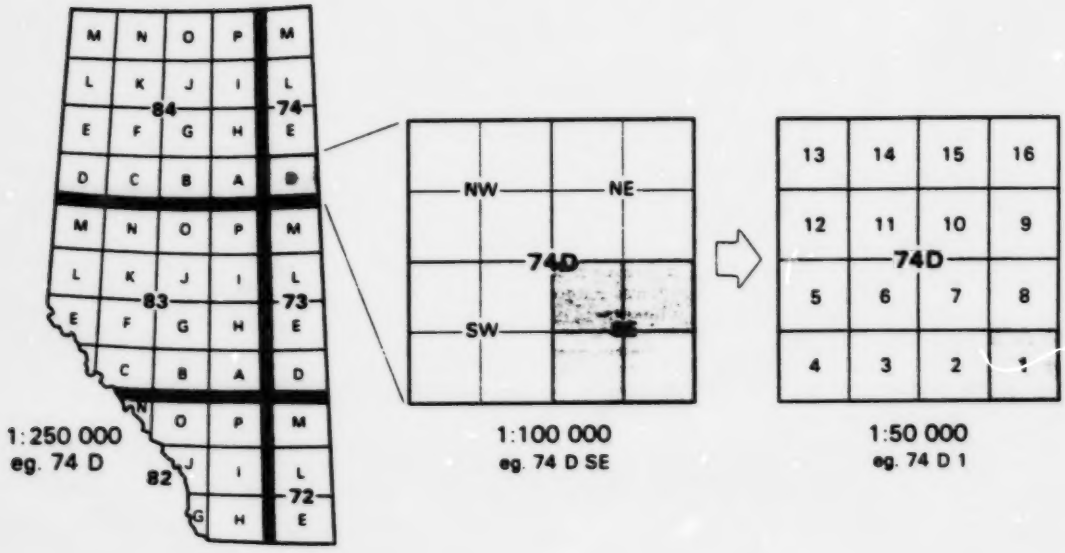

Figure 3. National Topographic System (Maps Alberta Catalogue '88 - '89; AFLW)

Background Notes re: National Topographic System:
Under the National Topographic System (NTS), Canada is divided into numbered quadrangles, each eight degrees longitude by four degrees latitude. Each of these large quadrangles are called 'Primary Sheets' or 'Number Units' (eg, '74' on Figure 3). Limits and identification of the quadrangles are based on the (subdivision of) Primary Sheets. The system of further subdivision follows.
Each 'Primary Sheet' can be divided into 16 unique 'Secondary Sheets' or 'Letter Units' of A to P inclusive. Each of the 'Secondary Sheets' comprises an area of 2 degrees longitude by 1 degree latitude (eg, 'D' of '83D' on Figure 3 is the Secondary Sheet designation). See also Figure 3 to identify those 'Secondary Sheets' that are located within Alberta.
Each of the 'Secondary Sheets' can be further subdivided into 16 unique 'Tertiary Sheets' or 'Portion Units' of 1 to 16 inclusive. Each of the 'Tertiary Sheets' comprises an area of 30 minutes longitude by 15 minutes latitude (eg, '16' of '74D1' on Figure 3 is the Tertiary Sheet Designation.

NTSS — National Topographic System (NTS): Secondary Sheet; pertains to the subdivision of a NTS Primary Sheet (NTSP) into 16 unique 'Secondary Sheets' or 'Letter Units'. These secondary sheets are designated A to P inclusive (map scale 1:250000). See NTSP for additional background information concerning NTSS and the National Topographic System.

NTST — National Topographic System (NTS): Tertiary Sheet; pertains to the subdivision of a NTS Secondary Sheet (NTSS) into 16 unique 'Tertiary Sheets' or 'Portion Units'. These tertiary sheets are designated 1 to 16 inclusive (map scale 1:50000). See NTSP for additional background information concerning NTST and the National Topographic System.

NWC — Natural Water Content; pertains to the natural water content of a sediment sample when it is part of the (geotechnical) Atterberg test. See ALLL for additional background information concerning the Atterberg test.

OBOT — Bottom of Outcrop Interval; refers to and is equivalent to the bottom part of the interval within an outcrop's structural description and/or an outcrop's named geological pick.

OC_SNS — Outcrop Sense Description; pertains to part of the structural geology information collected from an outcrop; more specifically, this attribute identifies a structure's sense of movement.

OFLT — Fluid Temperature: Oxidizing Atmosphere; pertains to part of the data generated during the Ash Fusion Temperature test and is identified as 'the temperature in degrees Celsius at which the fused cone has spread out to a flat layer with a maximum height of 1.6 mm under an oxidizing atmosphere'....ref:ERCB 'Data Element Description Report.

Background Notes re: Ash Fusion Temperature:
The temperature at which coal ash melts is an important consideration for coal-fired boilers. The molten ash forms silicic acid, a material that has a very corrosive effect on the fire bars.
Fusion points may be determined in either an oxidizing or reducing atmosphere.
For the test, a sample of ash, shaped into a sharp pointed pyramid, is heated and temperatures noted at which standard pyramid profiles are produced. The standard pyramid profiles include the original cone, initial deformation, softening, hemispherical and flow.
Due to equipment limitations, there may be limits to temperatures that can be measured in the determination of ash fusion points; it should be noted that these limits can, and do, vary between laboratories; when a temperature exceeds the maximum measurable temperature of the furnace, the value is usually reported, by the laboratory, as the 'maximum measurable temperature +'; as an example, the maximum measurable temperature for Loring Laboratories Ltd. is 2650 degrees F (1454 degrees C) while the maximum measurable temperature for Birtley Coal and Minerals Testing is 2800 degrees F (1537 degrees C).

OHET — Hemispherical Temperature: Oxidizing Atmosphere; pertains to part of the data generated during the Ash Fusion test and is identified as 'the temperature in degrees Celsius at which the cone has fused down to a hemispherical lump in which the height is equal to half the width of the base under an oxidizing atmosphere'....ref:ERCB 'Data Element Description Report'. See OFLT for additional background information concerning the Ash Fusion test.

OIDT — Initial Deformation Temperature: Oxidizing Atmosphere; pertains to part of the data generated during the Ash Fusion test and is identified as 'the temperature in degrees Celsius at which the tip of the cone softens to a round point under an oxidizing atmosphere'....ref:ERCB 'Data Element Description Report'. See OFLT for additional background information concerning the Ash Fusion test.

OKNUM — Analysis Approval (OK) Number; represents an unique internal AGS-assigned number which identifies 'whether the analysis record has been approved or contains suspicious data' .... ref: ERCB 'Data Element Description Report'. The OKNUM's are sequentially assigned integers beginning with 1; ie. 1 - analyses approved (A), 2 - seemingly bad data (B) and 3 - suspicious data (S). See A_APP for additional background information.

OPNG — Size of Sieve Opening; pertains to part of the data recorded during Sieve (Grain Size) Analysis and is identified as the size of the sieve opening in mm.

Background Note re: Sieve Analysis:
Sieve Analysis deals with the grain size distribution of a sediment; particle size, especially for granular material, is important in trying to predict engineering behavior.
Sieve Analysis is impractical for sieve openings of less than 0.075 mm (No. 200 U.S. Standard Sieve). For finer-grained sediments, hydrometer analysis is commonly used.

OPRJ — Original Project/Prospect Name Designation; as suggested, pertains to the original name of the project and/or prospect as designated by the COMPANY and/or the GEOL.

ORIG	Original Identification Number of the Datapoint; pertains to the original 'code supplied by the company for its identification of the drillhole or to identify the particular outcrop measured or for its identification of the "excavation"'....ref:ERCB 'Data Element Description Report'.
ORNTN	Orientation Type Description; pertains to part of the structural geology information collected from an outcrop; more specifically, this attribute identifies the status of the way-up of the strata.
ORNUM	Orientation Type Number; represents an unique internal AGS-assigned number which identifies the status of the way-up of the strata. The ORNUM's are sequentially assigned integers beginning with 1. See ORNTN for additional background information.
OSOT	Softening Temperature: Oxidizing Atmosphere; pertains to part of the data generated during the Ash Fusion test and is identified as 'the temperature in degrees Celsius at which the cone has fused down to a spherical lump in which the height is equal to the width of the base under an oxidizing atmosphere'....ref:ERCB 'Data Element Description Report'. See OFLT for additional background information concerning the Ash Fusion test.
OTOP	Top of Outcrop Interval; refers to and is equivalent to the upper part of the interval within an outcrop's structural description and/or an outcrop's named geological pick.
P2O5	Phosphorus Pentoxide; 'the percent weight of phosphorus pentoxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

P205_L — Phosphorus Pentoxide; 'the percent weight of phosphorus pentoxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

PAAD — Ash Content (Air-Dried Basis) of Proximate Analysis; pertains to part of the data generated during the Proximate Analysis test and is identified as 'the percent weight of inorganic residue remaining after ignition of combustible substances as determined by definite prescribed methods'....ref:ERCB 'Data Element Description Report'. For this attribute the ash determination has either been determined from an air-dried basis coal sample or the results have been adjusted to an air-dried basis from another basis. See EQM, PMAD and PMAR for additional background information concerning coal moistures.

Background Notes re: Proximate Analysis:
Proximate Analysis is one of the most common analysis of coal; it is the determination, by standard methods, of the moisture, ash, volatile matter and fixed carbon contents of a coal sample. The first three components are determined while the fourth, fixed carbon, is determined by difference, ie, the four components total 100%.
The ash content of coal is an important part of coal analysis. Ash content reflects the amount of heating value a coal may possess and, indirectly, the amount of mineral matter in the coal; ash content also gives a basic indication of the 'dirtiness' of the coal and may indicate the need for coal cleaning ; further, the ash content determines, in combination with ash fusion temperatures and ash oxide analyses, the suitability of various coals for industrial usage.
The volatile matter content is determined by measuring the weight loss when coal is heated under specific conditions, in the absence of air and correcting for the moisture content of the (air-dried) sample; the volatiles consist primarily of gases, such as hydrogen, carbon monoxide and methane, and condensable vapors; the volatile matter content (and composition) of coal is related to coal rank and is an important parameter in the classification of coal; volatile matter, in combination with other tests, also gives an indication of the coal's coking/caking capacity and/or its suitability as a feedstock for gasification and/or liquefaction processes.
The fixed carbon content of a coal is calculated by difference after the determination of moisture, ash and volatile matter contents by standard methods; the fixed carbon content represents the combustible portion of the residue remaining after the removal of the moisture and volatile matter.

PAAR — Ash Content (As Received Basis) of Proximate Analysis; pertains to part of the data generated during the Proximate Analysis test and is identified as 'the percent weight of inorganic residue remaining after ignition of combustible substances as determined by definite prescribed methods' ....ref: ERCB 'Data Element Description Report'. For this attribute the ash determination has either been determined from an as received basis coal sample or the results have been adjusted to an as-received basis from another basis. See EQM, PMAD and PMAR for additional background information concerning coal moistures. See PAAD for additional background information concerning Proximate Analysis.

PCHNUM — Pitch Type Number; represents an unique internal AGS-assigned number which identifies a measured pitch (structural geology). The PCHNUM's are sequentially assigned integers beginning with 1. See PITCH for additional background information.

PCP — Preconsolidation Pressure; pertains to the preconsolidation pressure of a sample when it forms part of the test results for the (geotechnical) Consolidation test. See CCN for additional background information concerning the Consolidation test.

PDSP — Peak Displacement; pertains to the peak displacement (measured in mm) of a sample when it is part of the Direct Shear (geotechnical) test. See BDEN for additional background information concerning the Direct Shear test.

PETNUM — Petrographic/Palynologic Analysis Sample Number; represents an unique internal AGS-assigned number which identifies a 'petrographic or palynologic analysis' sample. The PETNUM's are sequentially assigned integers beginning with 1. See PETSAM_NO for additional background information.

PETROG — Coal Petrography/Palynology Completed By; identifies the person that conducted/completed the petrographic/palynologic analyses of the coal sample.

PETSAM_NO — Petrographer/Palynologist's Identification Number of the Sample; identifies the number assigned by the coal petrographer/palynologist (PETROG) to uniquely identify a 'petrographic/palynologic analysis' sample.

PFCAD — Fixed Carbon Content (Air-Dried Basis): Proximate Analysis; pertains to part of the data generated during the Proximate Analysis test and is identified as as 'the percent weight of solid residue other than ash, obtained by destructive distillation under prescribed conditions'....ref:ERCB 'Data Element Description Report'. Fixed carbon results are either determined from an air-dried coal sample or the results have been adjusted to an air-dried basis from another basis. See EQM, PMAD and PMAR for additional background information concerning coal moistures. See PAAD for additional background information concerning Proximate Analysis.

PFCAR — Fixed Carbon Content (As Received Basis): Proximate Analysis; pertains to part of the data generated during the Proximate Analysis test and is identified as 'the percent weight of solid residue other than ash, obtained by destructive distillation under prescribed conditions'....ref:ERCB 'Data Element Description Report'. Fixed carbon results are either determined from an as received coal sample or the results have been adjusted to an as received basis from another basis. See EQM, PMAD and PMAR for additional background information concerning coal moistures. See PAAD for additional background information concerning Proximate Analysis.

PIEZO — Piezometers Installed in the Drillhole; pertains to the presence of piezometers. Code/record as Y or N to indicate whether or not said drillhole contains a piezometer(s).

PIKNUM — Geological Pick Number; represents an unique internal AGS-assigned number which identifies each of the geological pick intervals contained within the Database. The PIKNUM's are sequentially assigned integers beginning with 1.

PIK_Q — Quality of Geological Pick; describes and identifies, in the form of a comment , the 'quality' of a geological pick stored within the Database. No further description of PIK_Q has been completed to date.

PITCH — Pitch; identifies, in degrees, the mean pitch of linear structures (eg, striae) on an associated planar structure (structural geology). No further description of PITCH has been completed to date.

PLG — Plunge; the plunge of the trace of an axial plane. No further description of PLG has been completed to date.

PLIN — Plunge-Intermediate Degrees; pertains to part of the data generated from the petrographic analysis of polished blocks; the Plunge (Intermediate) is recorded in degrees. No further description of PLIN has been completed to date.

PLMN — Plunge-Minimum Degrees; pertains to part of the data generated from the petrographic analysis of polished blocks; the Plunge (Minimum) is recorded in degrees. No further description of PLMN has been completed to date.

PLMX — Plunge-Maximum Degrees; pertains to part of the data generated from the petrographic analysis of polished blocks; the Plunge (Maximum) is recorded in degrees. No further description of PLMX has been completed to date.

PMAD — Moisture Content (Air-Dried Basis): Proximate Analysis; identified as 'that moisture remaining in the sample after determining air dry loss, expressed as a percentage by weight. Synonymous descriptions are 'as determined moisture' and 'as analyzed moisture' and 'residual moisture'..ref:ERCB 'Data Element Description Report'. See EQM and PMAR for additional background information concerning coal moistures. See PAAD for additional background information concerning Proximate Analysis.

PMAR — Moisture Content (As-Received Basis): Proximate Analysis; identified as 'the percentage loss in weight when coal is heated under certain prescribed conditions'...ref:ERCB 'Data Element Description Report'. As received moisture may also be referred to as total moisture. See EQM and PMAD for additional background information concerning coal moistures. See PAAD for additional background information concerning Proximate Analysis.

PMDD — Maximum Dry Density: Proctor Test; pertains to the maximum dry density of a sample when it forms part of the Proctor (geotechnical) test.

Background Note re: Proctor test:
The Proctor Compaction Test determines the 'sediment density-water content' relationship of a sediment. Dry densities for each sediment sample are determined and plotted vs the water contents for each sample; the resulting cross-plot forms a compaction curve and is unique for a given sediment type, method of compaction and (constant) compactive effort.

POAD — Porosity, As Determined; identified as 'a percent measure of the pore volume per unit volume of coal as determined' ....ref: ERCB 'Data Element Description Report'. No further description of POAD has been completed to date.

POCK — Pocket Penetrometer; pertains to a (geotechnical) test result obtained from a pocket penetrometer, a hand-held device used primarily for in-field testing; the pocket penetrometer indicates the approximate unconfined compressive strength of a sediment. No further description of POCK has been completed to date.

POIN — Porosity, Insitu; identified as 'a percent measure of the pore volume per unit of coal insitu'....ref:ERCB 'Data Element Description Report'. No further description of POIN has been completed to date.

PORE_PRES — Pore Pressure @ Max P(1)-P(3); pertains to the Triaxial (geotechnical) test. No further description of PORE_PRES has been completed to date. See AXI_STR for additional background information concerning the Triaxial test.

PPM — Parts per Million; pertains to 'the measurement in parts per million of the trace element....as determined by the inorganic analysis of coal'....ref:ERCB 'Data Element Description Report'. Code as -99 for the 'default' value and -88 for 'trace' values.

PP_MAX — Pore Pressure @ Max P(1)/P(3); pertains to the Triaxial (geotechnical) test. No further description of PP_MAX has been completed to date. See AXI_STR for additional background information concerning the Triaxial test.

PREP — Sample Preparation Type Description; describes and identifies 'the degree of preparation of the coal used in the analysis' ....ref:ERCB 'Data Element Description Report' (Sample-Type of ERCB). ERCB's - "Sample - Type"

PREPNUM — Sample Preparation Type Number; represents an unique internal AGS-assigned number which identifies 'the degree of preparation of the coal used in the analysis'...ref:ERCB 'Data Element Description Report'. The PREPNUM's are sequentially assigned integers beginning with 1.

PSSTR — Peak Shear Stress; pertains to the peak shear stress of a sample when it is part of the Direct Shear (geotechnical) test. No further description of PSSTR has been completed to date. See BDEN for additional background information concerning the Direct Shear test.

PTMC — Pyrite and/or Marcasite; 'the percent weight of the minerals pyrite and/or marcasite (FeS2) as determined by inorganic analysis of coal'...ref:ERCB 'Data Element Description Report'. See SADB for additional background information concerning sulphur.

PTMC — Optimum Moisture Content: Proctor Test; pertains to the optimum moisture content of a sample when it forms part of the Proctor (geotechnical) test. See PMDD for additional background information concerning the Proctor test.

PVMAD — Volatile Matter Content (Air-Dried Basis) of Proximate Analysis; pertains to part of the data generated during the Proximate Analysis test and is identified as 'the percent weight of those products, exclusive of moisture, given off by a material as gas or vapor, determined by definite prescribed methods'... ref:ERCB 'Data Element Description Report'. Volatile matter results, for this attribute, are either determined from an air-dried coal sample or the results have been adjusted to an air-dried basis from another basis. See EQM, PMAD and PMAR for additional background information concerning coal moistures. See PAAD for additional background information concerning Proximate Analysis.

PVMAR — Volatile Matter Content (As Received Basis) of Proximate Analysis; pertains to part of the data generated during the Proximate Analysis test and is identified as 'the percent weight of those products, exclusive of moisture, given off by a material as gas or vapor, determined by definite prescribed methods'... ref:ERCB 'Data Element Description Report'. Volatile matter results, for this attribute, are either determined from an as received coal sample or the results have been adjusted to an as received basis from another basis. See EQM, PMAD and PMAR for additional background information concerning coal moistures. See PAAD for additional background information concerning Proximate Analysis.

P_L_ADJ — Geological Picks Adjusted to Geophysical Log Depths; denotes whether geological picks for a particular drillhole have been adjusted to reflect geophysical log depths. Code as Y or N to reflect said status of the geological picks of the drillhole.

QTZ — Quartz; 'the percent weight of the mineral quartz (SiO_2) as determined by inorganic analysis of coal'...ref:ERCB 'Data Element Description Report'.

RCNR — Reference Corner of Section; identifies from which corner of a Dominion/Alberta Land Survey System section (RSEC) the survey coordinates originate. Code/report RCNR as NW, NE, SW or SE. See LSD for additional background information concerning the Third System of Township Survey.

RDSP — Residual Displacement; pertains to the residual displacement of a sample when it is part of the Direct Shear (geotechnical) test. No further description of RDSP has been completed to date. See BDEN for additional background information concerning the Direct Shear test.

RECOV — Core Recovery in a Specific Individual Drillhole Interval; identifies the percentage of core recovered from a specific cored interval within a drillhole ; RECOV is defined as [(total thickness, in metres, of core recovered from the interval) / (thickness, in metres, of the same interval)] X 100% . For the overall core recovery of the drillhole, see CORE_RECOV.

REFRIG — Refrigerated; part of the information recorded for a sample (whole or in-part) when it is retained/stored for future reference. Code/record as Y or N to indicate whether the sample has been stored in a refrigerated environment.

REMAC — Reactive Macerals Content; pertains to and identifies the percent, by weight, of reactive macerals contained within a coal sample. No further description of REMAC has been completed to date.

REMARKS — Geological Picks Remarks; noted remarks concerning a geological pick stored within the Database.

REMD — Remarks Date; pertains to the 'date of a remark written about a mine'....or any other SITID stored within the Database. 'It will be used to search the remarks record for future add, change or delete'....ref:ERCB 'Data Element Description Report'. See REMX for additional background information. Code/record data as month-day-year.

REMX — SITID Remarks; as suggested, pertains to any remarks associated with a SITID stored within the Database. REMD, as noted prior, registers the date of the REMX.

RFLA — Pellets: Reflectance Angle; identifies the setting of the polarizer in degrees; the degrees are measured from the vertical plane. No further description of RFLA has been completed to date.

RFLT — Fluid Temperature: Reducing Atmosphere; pertains to part of the data generated during the Ash Fusion Temperature test and is identified as 'the temperature in degrees Celsius at which the fused cone has spread out to a flat layer with a maximum height of 1.6 mm under a reducing atmosphere'....ref:ERCB 'Data Element Description Report'. See OFLT for additional background information concerning the the Ash Fusion Test.

RGE — Range; 'the range number used within the Dominion/Alberta Land Survey System defined as: Lines extending north and south across the Province, 9.6 kilometers (6 miles) apart, numbered sequentially between meridians, from east to west' ....ref:ERCB 'Data Element Description Report'. See LSD for additional background information concerning the Third System of Township Survey.

RHET — Hemispherical Temperature: Reducing Atmosphere; pertains to part of the data generated during the Ash Fusion test and is identified as 'the temperature in degrees Celsius at which the cone has fused down to a hemispherical lump in which the height is equal to half the width of the base under a reducing atmosphere'....ref:ERCB 'Data Element Description Report'. See OFLT for additional background information concerning the Ash Fusion test.

RIDT — Initial Deformation Temperature: Reducing Atmosphere; pertains to part of the data generated during the Ash Fusion test and is identified as 'the temperature in degrees Celsius at which the tip of the cone softens to a round point under a reducing atmosphere'....ref:ERCB 'Data Element Description Report'. See OFLT for additional background information concerning the Ash Fusion test.

RNKNUM — Coal Rank Number; represents an unique internal AGS-assigned number which identifies and 'indicates the ASTM rank of the coal mined'....ref:ERCB 'Data Element Description Report'. The RNKNUM's are sequentially assigned integers beginning with 1. See C_RANK for additional background information.

RQD — Rock Quality Designation; pertains to the fraction of solid core recovered and is defined as [(sum of lengths of recovered core greater than 0.1 m in length) / (sum of length of core cut)] X 100%.

RSEC — Reference Section; as suggested, identifies the section number used within the Dominion/Alberta Land Survey System, from which the survey coordinates originate. In most cases, the RSEC and the SECT are the same; however, there are instances where the 'origin of the survey coordinates' section is not the same as the 'location of the datapoint' section. See LSD for additional background information concerning the Third System of Township Survey.

RSOT — Softening Temperature: Reducing Atmosphere; pertains to part of the data generated during the Ash Fusion test and is identified as 'the temperature in degrees Celsius at which the cone has fused down to a spherical lump in which the height is equal to the width of the base under a reducing atmosphere'....ref:ERCB 'Data Element Description Report'. See OFLT for additional background information concerning the Ash Fusion test.

RSSTR — Residual Shear Stress; pertains to the residual shear stress of a sample when it is part of the Direct Shear (geotechnical) test. No further description of RSSTR has been completed to date. See BDEN for additional background information concerning the Direct Shear test.

SADB — Sulphur (Air-Dried Basis); pertains to 'the percent weight of sulphur in its organic form'....ref:ERCB 'Data Element Description Report'. Organic sulphur results are either determined from an air-dried sample of coal or the results have been adjusted to an air-dried basis from another basis. See PMAD and PMAR for additional background information concerning coal-related moistures.

Background Notes re: Sulphur:
The determination of total sulphur content, within a coal, is extremely important in evaluating the impacts of the sulphurous oxide emissions when it is burned.
Sulphur may occur as:
o organic sulphur; ie, incorporated into the hydrocarbon compounds of the coal (SADB and/or SARB)
o inorganic sulfides; ie, occurring primarily as pyrite and/or marcasite (PTMC)
o inorganic sulfates (SPHT).
In the Ultimate Analysis, the 'total sulphur' content is determined, representing sulphur occurrences in all 3 of the above forms (UAS).

SAMNUM — Sample Number; represents an unique internal AGS-assigned number which identifies a sampled interval. The SAMNUM's are sequentially assigned integers beginning with 1. If a sample is split for different types of analysis, all splits would be assigned the same SAMNUM, but each split would have an unique ANANUM.

SAMTYPNUM — Sample Type Number; represents an unique internal AGS-assigned number which identifies, 'for drillholes ... whether a sample was taken and in what form'....ref:ERCB 'Data Element Description Report'. The SAMTYPNUM's are sequentially assigned integers beginning with 1. See SPL_TYPE for additional background information.

SARB — Sulphur (As Received Basis); pertains to 'the percent weight of sulphur in its organic form'....ref:ERCB 'Data Element Description Report'. Organic sulphur is either determined from an as received sample of coal or the results have been adjusted to the as received basis from another basis. See SADB for additional background information concerning sulphur. See PMAD and PMAR for additional background information concerning coal-related moistures.

SBASE — Base (Bottom) of Drillhole Sample Interval; refers to and is equivalent to the bottom part of a sampled interval from within a drillhole.

SCLBOT — Bottom of a Coal Channel Sample Interval; refers to and is equivalent to the bottom part of a sampled interval within a coal channel.

SCLTOP — Top of a Coal Channel Sample Interval; refers to and is equivalent to the top part of a sampled interval within a coal channel.

SDMN — Pellets: Standard Deviation of Minimum Reflectance; relates to data generated from the petrographic analysis of coal pellets and more specifically, pertains to the standard deviation of the mean of the minimum reflectance value. No further description of SDMN has been completed to date.

SDMX — Pellets: Standard Deviation of Maximum Reflectance; relates to data generated from the petrographic analysis of coal pellets and more specifically, pertains to the standard deviation of the mean of the maximum reflectance value. No further description of SDMX has been completed to date.

SDRDM — Pellets: Standard Deviation of Random Reflectance; relates to data generated from the petrographic analysis of coal pellets and more specifically, pertains to the standard deviation of the mean of the random reflectance value. No further description of SDRM has been completed to date.

SECT — Section; identifies 'the section number used within the Dominion/Alberta Land Survey System'....ref:ERCB 'Data Element Description Report'. See LSD for additional background information concerning the Third System of Township Survey.

SEGNUM — Sample Segment Type Number; represents an unique internal AGS-assigned number which identifies the type of sampled interval/segment. The SEGNUM's are sequentially assigned integers beginning with 1. See SGMT for additional background information.

SG — Specific Gravity; indicates 'the ratio of the density of coal to that of water. The number may be the true, apparent or the upper limit of a range of specific gravities depending on the "Specific Gravity Type"'....ref:ERCB 'Data Element Description Report'. No further description of SG has been completed to date.

SGIN — Slagging Indices; identified as 'a measure of the tendency of the semi-fluid ash particles to adhere to the boiler tubes' .... ref: ERCB 'Data Element Description Report. No further description of SGIN has been completed to date.

SGLO — Specific Gravity: Lower Limit of a Range; pertains to and indicates 'the lower limit of a range of specific gravities applicable only if the "Specific Gravity Type" is a Code 2 (Fraction)' ie, SGNUM equal 3. 'The number is the ratio of the density of coal to that of water'....ref:ERCB 'Data Element Description Report'. No further description of SGLO has been completed to date.

SGMT — Sample Segment Type Description; pertains to and identifies the type of sampled interval/segment.

Background Notes re: Sample Segment Type Descriptions:
Sample Segment Descriptions originated in the TransAlta Utilities Corporation Drillhole Database. Sample segment types are identified as being Composite, Gross or Detail.
A Composite Sample Segment refers to a composite sample (ie, top to bottom) of the coal seam/zone.
A Gross Sample Segment subdivides a coal seam/zone into readily identifiable subunits usually based on visual and/or physical changes in lithology and/or changes in geophysical log response(s). Partings, depending on their frequency and/or thickness, may or may not be sampled.
A Detail Sample Segment subdivides a coal seam/zone into numerous samples each of an equal predetermined thickness. This mode of sampling is used infrequently.

SGNUM — Specific Gravity Type Number; represents an unique internal AGS-assigned number which identifies 'the type of Specific Gravity' test run....ref:ERCB 'Data Element Description Report'. The SGNUM's are sequentially assigned integers beginning with 1. See SGTYPE for additional background information.

SGTYPE — Specific Gravity Type Description; pertains to and identifies 'the type of Specific Gravity' test run....ref:ERCB 'Data Element Description Report'. No further description of SGTYPE has been completed to date.

SHAPE — Specimen Shape: Direct Shear Test; pertains to the shape of a sample specimen when it has been subjected to the Direct Shear (geotechnical) test. No further description of SHAPE has been completed to date. See BDEN for additional background information concerning the Direct Shear test.

SIDR — Siderite; 'the percent weight of the mineral siderite ($FeCO_3$) as determined by inorganic analysis of coal'...ref:ERCB 'Data Element Description Report'.

SIGMA1 — Sigma 1 @ Max P(1)-P(3); pertains to the Triaxial (geotechnical) test. No further description of SIGMA1 has been completed to date. See AXI_STR for additional background information concerning the Triaxial test.

SIGMA1_MAX — Sigma 1 @ Max P(1)/P(3); pertains to the Triaxial (geotechnical) test. No further description of SIGMA1_MAX has been completed to date. See AXI_STR for additional background information concerning the Triaxial test.

SIGMA3 — Sigma 3 @ Max P(1)-P(3); pertains to the Triaxial (geotechnical) test. No further description of SIGMA3 has been completed to date. See AXI_STR for additional background information concerning the Triaxial test.

SIGMA3_MAX — Sigma 3 @ Max P(1)/P(3); pertains to the Triaxial (geotechnical) test. No further description of SIGMA3_MAX has been completed to date. See AXI_STR for additional background information concerning the Triaxial test.

SIO2 — Silicon Dioxide; 'the percent weight of silicon dioxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

SIO2_L — Silicon Dioxide; 'the percent weight of silicon dioxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

SITID — Site Identification Number; represents an unique internal AGS-assigned number which identifies a datapoint in the AGS Coal Database. The SITID's are sequentially assigned integers beginning with 1. As an example, a SITID can be a drillhole location, outcrop or the start of a traverse.

SIVNUM — Size of Sieve Opening Number; represents an unique internal AGS-assigned number which identifies the size of a sieve opening. The SIVNUM's are sequentially assigned integers beginning with 1. See OPNG for additional background information concerning Sieve Analysis.

SJNUM — Status of Joints Number; represents an unique internal AGS-assigned number which identifies the style/status of a noted/described joint. The SJNUM's are sequentially assigned integers beginning with 1. See JNT_ST for additional background information concerning Status of Joints.

SNSNUM — Outcrop Sense Number; represents an unique internal AGS-assigned number which identifies part of the structural information collected from a geological outcrop; more specifically, the SNSNUM identifies a structure's sense of movement. The SNSNUM's are sequentially assigned integers beginning with 1. See OC_SNS for additional information concerning Outcrop Sense.

SO3 — Sulphur Trioxide; 'the percent weight of sulphur trioxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

SO3_L — Sulphur Trioxide; 'the percent weight of sulphur trioxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

SOBOT — Bottom of a Sampled Outcrop Interval; refers to and is equivalent to the lower part of a sampled interval within an outcrop.

SOILS — Soil(s) Test(s) Result(s) Available; pertains to the presence of results of any conducted soils tests. Code/record as Y or N to indicate whether or not said soils information exists.

SOTOP — Top of a Sampled Outcrop Interval; refers to and is equivalent to the upper part of a sampled interval within an outcrop.

SPHAL — Sphalerite; 'the percent weight of the mineral sphalerite ((Zn,Fe) S) as determined by inorganic analysis of coal' .... ref: ERCB 'Data Element Description Report'.

SPECNUM — Specimen Number; represents an unique internal AGS-assigned number which identifies the specimen number of a geotechnical sample for the Triaxial and/or the Direct Shear (geotechnical) tests. The SPECNUM's are sequentially assigned integers beginning with 1. See SPMN_NO for additional background information. See AXI_STR for additional background information concerning the Direct Shear test. See BDEN for additional background information concerning the Triaxial test.

SPFNUM — Special Feature Number; represents an unique internal AGS-assigned number which identifies the observed 'special (geological) features' within a lithologic interval. The SPFNUM's are sequentially assigned integers beginning with 300. See SP_FE for additional background information. See L_TYP, MAINUM, MODNUM, M_DESC and M_TYP for additional background information concerning the description and/or coding of a lithologic interval.

SPHT — Sulfates; 'the percent weight of sulphur occurring as a sulfate'...ref:ERCB 'Data Element Description Report'. See SADB for additional background information concerning sulphur.

SPL_TYPE — Sample Type Description; describes and identifies, 'for drillholes....whether a sample was taken and in what form'....ref:ERCB 'Data Element Description Report' (Sample-Code of ERCB).

SPMN_NO — Specimen Number Description; identifies the laboratory-assigned specimen number of a geotechnical sample for the Triaxial and/or the Direct Shear (geotechnical) tests. See AXI_STR for additional background information concerning the Direct Shear test. See BDEN for additional background information concerning the Triaxial test.

SPT — Standard Penetration Test; pertains to a (geotechnical) test to determine relative densities of stratum; results are obtained by recording the number of hammer blows required to advance the sample tube.

Background Notes re: Standard Penetration Test :
Standard penetration test results are obtained by driving a split-spoon sampler a total of 450 millimetres (18 inches) with a 64 kilogram (140 pound) hammer falling for a fixed distance of 760 millimetres (30 inches). A record is made of the number of blows required to drive each 150 millimeter (6 inch) segment. The number of blows required to drive the sampler the last 300 millimetres (12 inches) is an indication of the relative density of the material and is generally referred to as the standard penetration resistance or SPR. Samples are generally taken at each change of sediment stratum and/or at specified intervals of depth.
The blow count from the standard penetration test is frequently used as a measure of relative density and/or stiffness of the sand/stratum in which the sample is taken. This method is not recommended for measuring comparable characteristics of formations that contain gravels (particularly large sizes) or cohesive sediments.

SP_FE — Special Features Description; pertains to and identifies the observed 'special (geological) features' within a lithologic interval. See L_TYP, MAINUM, MODNUM, M_DESC and M_TYP for additional background information concerning the description and/or coding of a lithologic interval.

SRCNUM — Source of Datapoint Number; represents an unique internal AGS-assigned number which identifies 'the entity which the Coalhole Record represents'....ref:ERCB 'Data Element Description Report'; ie, this attribute uniquely identifies the types of datapoints stored within the AGS Coal Database. The SRCNUM's are sequentially assigned integers beginning with 1. See SRC_DESC for additional background information.

SRC_DESC — Source of Datapoint Description; pertains to and identifies 'the entity which the Coalhole Record represents'....ref:ERCB 'Data Element Description Report'; ie, this attribute uniquely identifies the types of datapoints (eg. drillhole (type of), test pit, adit, trench and measured section) stored within the AGS Coal Database.

SRVNUM — Type of Survey Number; represents an unique internal AGS-assigned number which identifies the original (type of) survey coordinates for a given datapoint (SITID). The SRVNUM'S are sequentially assigned integers beginning with 1. See SURV_DESC for additional background information.

STANUM — Coal Mine Legal Status Number; represents an unique internal AGS-assigned number which describes 'the legal status of a coal mine'....ref:ERCB 'Data Element Description Report'. The STANUM's are sequentially assigned integers beginning with 1. See M_LGL_S for additional background information.

STBI — Stability Index from Petrography; pertains to a stored record on the GSC's database. No further supplemental technical information has been located to date.

STOP — Top of Drillhole Sample Interval; refers to and is equivalent to the top part of a sampled interval from within a drillhole.

STRI — Strength Index from Petrography; pertains to a stored record on the GSC's database. No further supplemental technical information has been located to date.

ST_DT	Commencement (start) Date of Petrographic / Palynologic Analysis; as suggested, pertains to the starting date of the petrographic/palynologic analysis of a particular coal sample. Code/report date as month-day-year.
SURV_DESC	Type of Survey Description; describes and identifies the original (type of) survey coordinates for a given datapoint (SITID). Examples of SURV_DESC include Dominion/Alberta Land Survey coordinates, Baseline coordinates, and UTM coordinates.
SV_NO	U.S. Standard Sieve Number; identifies the U.S. Standard Sieve Numbers used for Sieve (Particle/Grain Size) Analysis. See OPNG for additional background information concerning Sieve Analysis.
SZNUM	Size Fraction Number; represents an unique internal AGS-assigned number which identifies 'the size of the coal used in sample analysis'....ref:ERCB 'Data Element Description Report'. The SZNUM's are sequentially assigned integers beginning with 1. See SZ_FR for additional background information.
S_BY	Sampled By; identifies the person who generated the sample. Code/report data by surname followed by the initial(s) of first name(s).
S_DT	Date of Sampling; as suggested, pertains to the date of sampling. Code/report date as month-day-year.
S_LTH	Sample Length; identifies, in meters, the length of a given sample obtained from a drillhole; depending on the percent core recovery of a given interval (RECOV), S_LTH may be equal to or less than the interval thickness. See CORE_RECOV for the overall core recovery (%) of a drillhole. See RECOV for the core recovery (%) of a drillhole interval.
S_L_ADJ	Sample Intervals Adjusted to Geophysical Log Depths; as suggested, denotes whether sample intervals for a particular drillhole have been adjusted to reflect geophysical log responses. Code as Y or N to reflect said status of the sampled intervals of the drillhole.

S_NO — Sample Number; pertains to an identifier assigned by the sampler (S_BY) to uniquely identify a sample, in the case of data from the ERCB Coal hole file the S_NO is the ERCB's sample number "Sample-No".

S_RMX — Sample Interval Remarks; pertains to any remarks associated with a given sample.

S_WT — Sample Weight; the weight of a given sample in kilograms.

TD — Total Depth; the total drilled depth, in meters, of a drillhole.

TENTME — Pertains to the 10 Degree Transverse Mercator System; represents the 'east' coordinate, in metres, of a datapoint as measured from a reference line of longitude (115°) where coordinates east of 115° are positive, and those to the west are negative.

TENTMN — Pertains to the 10 Degree Transverse Mercator System; represents the 'north' coordinate, in metres, of a datapoint as measured from the equator.

TE_SYM — Trace Element Symbol; pertains to and identifies the symbol for elements of the periodic table.

THRU — Percent of Material Passing Through; pertains to part of the data recorded during Sieve (Particle/Grain Size) Analysis and is identified as the percent of material that passes through a given sieve (see SIVNUM and/or SV_NO). See OPNG for additional background information concerning Sieve Analysis.

TIO2 — Titanium Oxide; 'the percent weight of titanium oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

TIO2_L — Titanium Oxide; 'the percent weight of titanium oxide as determined in the chemical analysis of coal ash'....ref:ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

TRAVNUM — Traverse Number; represents an unique internal AGS-assigned number which identifies a traverse contained within the AGS Coal Database. The TRAVNUM's are sequentially assigned integers beginning with 1. See TRAV_NO for additional background information.

TRAV_NO — Traverse Number as Assigned in the Field; pertains to an identifier, assigned in the field, to uniquely identify a geological traverse.

TRD — Trend; the trend (ie, the azimuth) of the trace of an axial plane. No further description of TRD has been completed to date.

TRIN — Trend-Intermediate Degrees; pertains to part of the data generated from the petrographic analysis of polished blocks; the Trend (Intermediate) is recorded in (azimuth) degrees. No further description of TRIN has been completed to date.

TRMN — Trend-Minimum Degrees; pertains to part of the data generated from the petrographic analysis of polished blocks; the Trend (Minimum) is recorded in (azimuth) degrees. No further description of TRMN has been completed to date.

TRMX — Trend-Maximum Degrees; pertains to part of the data generated from the petrographic analysis of polished blocks; the Trend (Maximum) is recorded in (azimuth) degrees. No further description of TRMX has been completed to date.

TRTMC — Pertains to the 3 Degree Transverse Mercator System; represents the central meridian (ie, the reference line of longitude) from which the eastern coordinate (TRTME) is measured. No further supplemental technical information re: 3TM has been located to date.

TRTME — Pertains to the 3 Degree Transverse Mercator System; represents the 'east' coordinate, in metres, of a datapoint as measured from the central meridian (TRTMC). No further supplemental technical information re: 3TM has been located to date.

TRTMN — Pertains to the 3 Degree Transverse Mercator System; represents the 'north' coordinate, in metres, of a datapoint as measured from the equator. No further supplemental technical information re: 3TM has been located to date.

TRTMZ — 3 Degree Transverse Mercator System Zone; each central meridian (TRTMC) passes through the centre of a 3TM_Zone ; each zone has its own assigned number. No further supplemental technical information re: 3TM has been located to date.

TR_EL — Trace Element; identifies each of the trace elements, by name, as listed in the periodic table.

TWP — Township; 'the township number used within the Dominion/Alberta Land Survey System and defined as: The area enclosed by the Township lines, which run east and west across the Province 9.6 kilometers (6 miles) apart, and Range lines. The Township lines are numbered sequentially from south to north'....ref:ERCB 'Data Element Description Report'. See LSD for additional background information concerning the Third System of Township Survey.

UAA — Ash Content (Air-Dried Basis) of Ultimate Analysis; 'the percent weight of inorganic residue remaining after ignition of combustible substances as determined by definite prescribed methods'....ref:ERCB 'Data Element Description Report'.

Background Notes re: Ultimate Analysis:
Ultimate Analysis, usually determined from an air-dried sample, is used to determine the carbon, hydrogen, nitrogen, sulfur and oxygen (by difference) of a coal sample.
The contents of carbon, hydrogen and oxygen are important in assessing the coking, gasification and liquifaction properties of a coal. Further, they may be used as indices of rank and as parameters for coal classification.
Nitrogen and sulfur contents represent possible sources of pollution should the coal be used for combustion applications.

UAC — Carbon Content (Air-Dried Basis) of Ultimate Analysis; 'the percent weight of carbon as determined in an Ultimate Analysis'....ref:ERCB 'Data Element Description Report'. See UAA for additional background information concerning Ultimate Analysis.

UAH — Hydrogen Content (Air-Dried Basis) of Ultimate Analysis; 'the percent weight of hydrogen as determined in an Ultimate Analysis'....ref:ERCB 'Data Element Description Report'. See UAA for additional background information concerning Ultimate Analysis.

UAMAD — Moisture Content (Air-Dried Basis) of Ultimate Analysis; 'the percent weight moisture if Ultimate Analysis was not reported on a dry basis'....ref:ERCB 'Data Element Description Report'. See UAA for additional background information concerning Ultimate Analysis.

UAN — Nitrogen Content (Air-Dried Basis) of Ultimate Analysis; 'the percent weight of nitrogen as determined in an Ultimate Analysis'....ref:ERCB 'Data Element Description Report'. See UAA for additional background information concerning Ultimate Analysis.

UAO — Oxygen Content (Air-Dried Basis) of Ultimate Analysis; 'the percent weight of oxygen as determined in an Ultimate Analysis'....ref:ERCB 'Data Element Description Report'. See UAA for additional background information concerning Ultimate Analysis.

UAS — Sulfur Content (Air-Dried Basis) of Ultimate Analysis; 'the percent weight of sulfur as determined in an Ultimate Analysis'....ref:ERCB 'Data Element Description Report'. See UAA for additional background information concerning Ultimate Analysis. See SADB for additional background information concerning sulfur.

UINC — Inclusion Code re: Hydrogen and Oxygen Contents: Ultimate Analysis; identifies 'whether or not, percent weights of hydrogen and oxygen include the hydrogen and oxygen weights in the moisture (0 = Yes ; 1 = No)'....ref:ERCB 'Data Element Description Report'. For the AGS coal Database, code/report as 'Y' or 'N'. See UAA for additional background information concerning Ultimate Analysis.

UNDT — Undetermined Oxides; the percent weight of 'undetermined oxides' as determined in the chemical analysis of coal ash; this result reflects the more commonly run 'high temperature analysis'.

UNDT_L — Undetermined Oxides; the percent weight of 'undetermined oxides' as determined in the chemical analysis of coal ash; this result reflects the more commonly run 'low temperature analysis'.

UN_COMP — Unconfined Compression Test; pertains to the results from a (geotechnical) test. No further description of UN_COMP has been completed to date.

UTMC — Universal Transverse Mercator Projection: Central Meridian; pertains to and is identified as 'the longitude to which the UTM-Easting is referenced'....ref:ERCB 'Data Element Description Report'.

Background Notes re: Universal Transverse Mercator Projection (UTM):
This System, a modification of the Transverse Mercator System, was introduced by the United States Army in the early 1950's as a uniform projection system for use throughout the world, excepting the polar regions. It is now well established and has been adapted for civilian purposes. The world is divided into 60 Zones, each extending through six degrees of longitude. The Zones are numbered consecutively from 1 to 60 beginning with the Zone between 180 degrees W and 174 degrees W and continuing eastward. A Zone extends 3 degrees eastward and westward from its Central Meridian. Figure 4 shows the UTM Zones and Central Meridians for Alberta.

A scale distortion or grid scale constant of 0.9996 is applied along the Central Meridian of each Zone to improve scale retention characteristics of the projection. A plane rectangular metric grid is superimposed on each zone, assigning a 500,000 meter false Easting (Y coordinate value) to the Central Meridian, a 0 (zero) Northing (X coordinate) to the Equator for the Northern Hemisphere and a false Northing of 10,000,000 meters to the Equator for the Southern

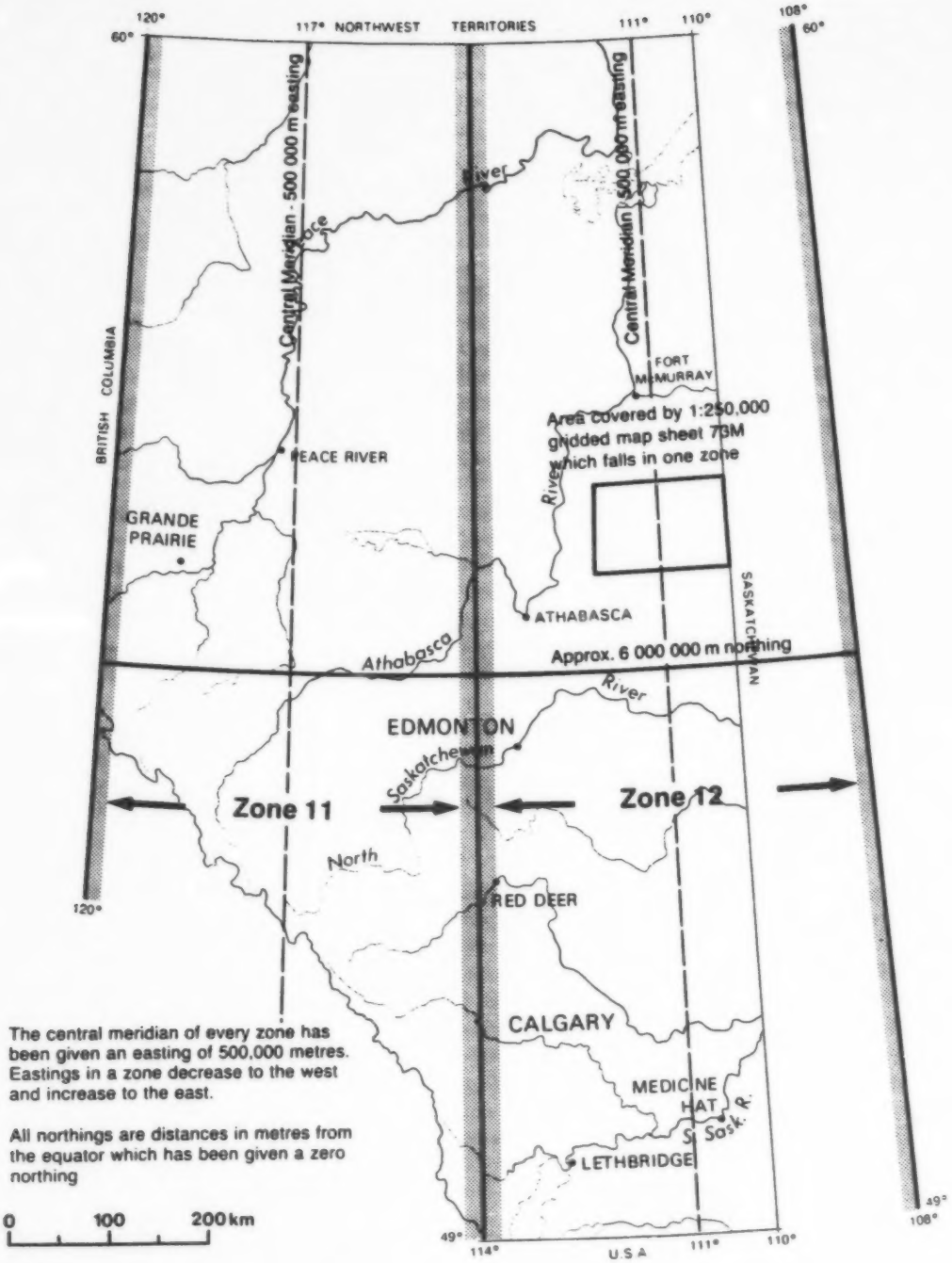

Figure 4. Universal Transverse Mercator Projection (UTM) for Alberta

Hemisphere. By this arrangement, negative coordinate values are eliminated.
There is customarily a grid overlap of approximately 40 kilometers on either side of each Zone boundary.
The UTM System excludes the polar regions and is used between the latitudes of 84 degrees N and 80 degrees S.

Both polar regions are covered by the Universal Polar Stereographic System which compliments the UTM System but is quite independent of it.

UTME — Universal Transverse Mercator Projection (6°): Easting; pertains to and is identified as 'the distance in metres of a point measured east of a reference longitude'....ref:ERCB 'Data Element Description Report'. See UTMC for additional background information concerning Universal Transverse Mercator Projection. Includes a 500 000m assigned value.

UTMN — Universal Transverse Mercator Projection (6°): Northing; pertains to and is identified as 'the distance in metres of a point measured north of the equator'....ref:ERCB 'Data Element Description Report'. See UTMC for additional background information concerning Universal Transverse Mercator Projection.

UTMZ — Universal Transverse Mercator Projection (6°): Zone; identifies the Zone to which the UTM-Easting is referenced. See UTMC for additional background information concerning Universal Transverse Mercator Projection.

VANE — Vane Shear Test; pertains to the results from a (geotechnical) test.

Background Notes re: Vane Shear Test:
Vane shear tests are used to determine the shear strength of sediments insitu.
The instrument consists of a rod with radial vanes. Once pushed into the sediment, the vane is rotated by an applied torque. The resistance to the applied torque is provided by the shearing forces on the two ends of the vane and on the circumferential plane.
The instrument works best in soft to stiff clays. Readings may be unreliable if the vane encounters sand layers, varves, stones, etc. and/or the vane is rotated too rapidly.

VITR — Vitrinite; pertains to maceral analysis and is defined as 'the percent weight of the predominant maceral group composed of collinite and telinite'....ref:ERCB 'Data Element Description Report'. No further description of VITR has been completed to date.

VO3 — Vanadium Trioxide; 'the percent weight of vanadium trioxide as determined in the chemical analysis of coal ash' ....ref: ERCB 'Data Element Description Report'; this result reflects the more commonly run 'high temperature analysis'.

VO3_L — Vanadium Trioxide; 'the percent weight of vanadium trioxide as determined in the chemical analysis of coal ash' ....ref: ERCB 'Data Element Description Report'; this result reflects the less commonly run 'low temperature analysis'.

VISC — Viscosity; 'a measurement in pascal seconds of the resistance to flow of fluid ash and is defined as the ratio of the shearing stress to the shear of motion'....ref:ERCB 'Data Element Description Report'. No further description of VISC has been completed to date.

WIDE — Width of Excavation; pertains to the 'width of an excavation in meters as measured at the bottom'....ref:ERCB 'Data Element Description Report'. Within the AGS Database, WIDE identifies the width of an adit, a test pit or a trench.

WRHNUM — Warehouse Number; represents an unique internal AGS-assigned number which identifies the sample storage warehouse. The WRHNUM's are sequentially assigned integers beginning with 1. See WRH_NM for additional background information.

WRHTAGNO — Warehouse Tag Number; pertains to and is identified as the warehouse-assigned-tag-no to identify 'saved/retained' samples. No further description of WRHTAGNO has been completed to date.

WRH_ADD — Warehouse Address; the physical address (ie. the street, city, etc.) of the sample storage warehouse. No further description of WRH_ADD has been completed to date.

WRH_CNTCT Warehouse Contact Person; identifies the warehouse-person responsible for the storage of 'saved/retained' samples. Code/report data by surname followed by the initial(s) of first name(s).

WRH_NM Warehouse Name; identifies the name of the warehouse where 'saved/retained' samples have been archived. No further description of WRH_NM has been completed to date.

WRH_PH Warehouse Phone Number; identifies the phone number of the warehouse where 'saved/retained' samples have been archived. Code/report data to include the area code followed by the seven digit number.

WTR_LVL Water Level Within a Drillhole; identified as 'the depth at which water is encountered by a drillhole. 'Zero indicates unknown ....ref:ERCB 'Data Element Description Report'. No further description of WTR_LVL has been completed to date.

XBCD X-Coordinate of a Benchmark; pertains to a benchmark and is identified as 'the X-coordinate of a point relative to a set of axes'....ref:ERCB 'Data Element Description Report'. No further description of XBCD has been completed to date.

XCMG X-Coordinate of a Mine Grid; pertains to a mine grid and is identified as 'the X-coordinate of a point relative to a set of axes'....ref:ERCB 'Data Element Description Report'. No further description of XCMG has been completed to date.

XSEC_AR Cross-Section Area: Direct Shear Test; pertains to the shape of a sample specimen when it has been subjected to the Direct Shear (geotechnical) test. No further description of XSEC_AREA has been completed to date. See BDEN for additional background information concerning the Direct Shear test.

YBCD Y-Coordinate of a Benchmark; pertains to a benchmark and is identified as 'the Y-coordinate of a point relative to a set of axes'....ref:ERCB 'Data Element Description Report'. No further description of YBCD has been completed to date.

YCMG Y-Coordinate of a Mine Grid; pertains to a mine grid and is identified as 'the Y-coordinate of a point relative to a set of axes'....ref:ERCB 'Data Element Description Report'. No further description of YCMG has been completed to date.